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JUN 29 1925

The
# British Medical Journal

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

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**No. 3363.** SATURDAY, JUNE 13, 1925. **Price 1/3**

## OUT OF CONDITION

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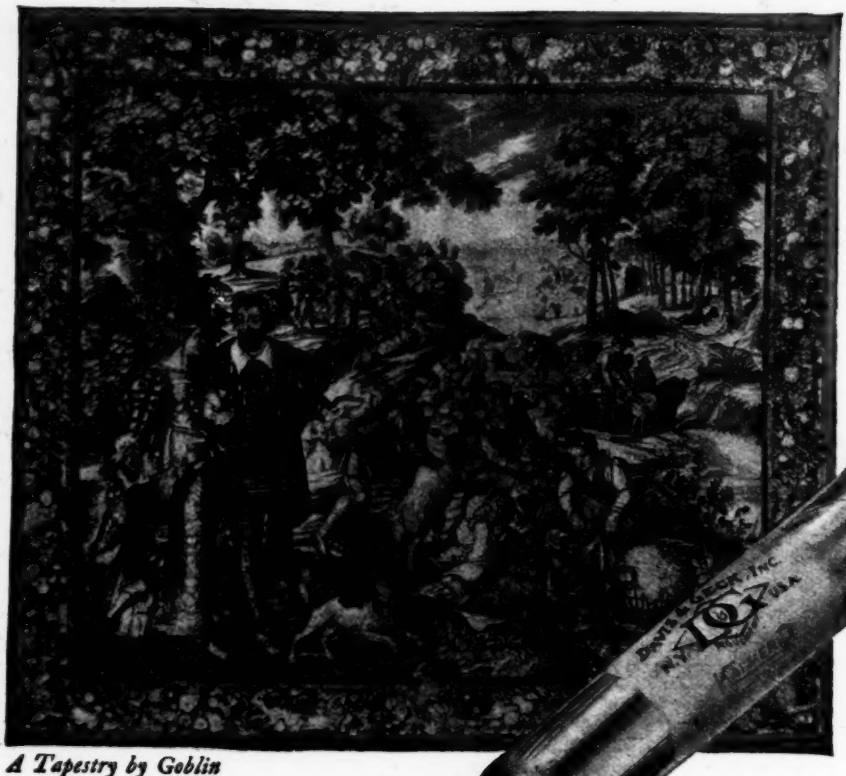

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## A British Medical Association Lecture

ON

# SOME PROBLEMS OF THYROID DISEASE.

DELIVERED BEFORE THE ULSTER BRANCH ON APRIL 30TH

BY

ROBERT McCARRISON, C.I.E., M.D., F.R.C.P.,
LIEUTENANT-COLONEL, INDIAN MEDICAL SERVICE.

THE problems to which I desire to direct attention relate (1) to certain causes of thyroid disorder; (2) to the influence of iodine in preventing either thyroid hyperplasia or undue accumulation of colloid material in the gland; and (3) to the types of simple goitre with which we have to deal when employing iodine as a prophylactic agent.

### CAUSES OF THYROID DISORDER.

An essential function of the thyroid gland is the manufacture, and supply to the body tissues, of a secretion containing certain active principles or hormones. This endocrine activity is generally believed to constitute the gland's sole function; but it may be doubted whether it has not some other part to play in the metabolic cycle, and whether the administration of the whole gland substance, or of its extracts, provides a complete substitute for the gland itself. Thyroxin, which contains 65 per cent. of iodine, is regarded as the chief, if not the only, active principle of the gland; but it has not yet been definitely proven that thyroxin is produced as such *in vivo*. Nevertheless, most, if not all, of the thyroid gland's activities are exhibited by this substance. Assuming that thyroxin is the gland's active principle, it may be said that the essential function of the thyroid gland is to produce thyroxin, to maintain a definite concentration of it in the tissues, and by its means to ensure a higher rate of metabolism than would exist in its absence. But it can hardly be doubted that the gland has more to do than to control combustive processes. Its anabolic activities and its regulation of the growth and repair of the body tissues are no less important. The thyroid gland is essential to the normal metabolism of iodine, a matter about which very little is known at present. It provides some substance which controls the distribution of iodine within the body and maintains a normal concentration of iodine in the blood. In the absence of the thyroid iodine accumulates in the blood, while the administration of thyroid substance restores the amount of iodine in the blood to normal limits (Hudson). On the other hand, iodine is essential to the functional activity of the thyroid gland. But it does not appear that it is essential to the functional activity of thyroxin, at least in so far as mammalian metabolism is concerned. The effects which thyroxin exercises on metabolism are, according to Kendall, independent of the iodine it contains:

> "The function of iodine within the molecule is to increase the reactivity and sensitiveness of the functioning groups present, viz., carboxyl and imino; any other function of iodine is highly problematical."

There is reason to believe that besides thyroxin the thyroid produces other physiologically active substances. Thus, Kendall has extracted one which has no effect on the metabolic rate, although it contains about one-half of the total iodine in the thyroid proteins; it is mainly concerned with the nutrition of the skin and its appendages. Besides these there may be others exercising specific effects on certain organs and tissues; so that the composition of the thyroid gland's secretion is a very complex problem, and one which is far from being definitely settled. It is for this reason, and because the precise part played by the thyroid gland in the metabolic cycle is still so little understood, that the difficulties in the way of elucidating the causes of its disorders are so great. But it would seem to be fairly obvious that such disorders may be brought about by factors which interfere with the normal elaboration of the gland's secretion or with the normal utilization of its products.

The efficient operation of the thyroid gland is dependent not only on the adequate provision of the raw materials from which its hormone-containing secretion is elaborated, but on a balanced adjustment of ions in its fluids and membranes. The composition of the food is a matter of the greatest importance to the organ, since it is from the food that it derives not only the iodine and other essential constituents of its secretion, but those mineral elements on which the balanced adjustment of ions in its fluid and membranes, and in the cell and tissue plasma of the body generally, depends. It is not enough that the composition of the food should be normal; conditions in the alimentary tract must be such as admit of the adequate absorption of all those elements and complexes which are necessary to the thyroid gland's normal operation. It is, therefore, at the threshold of absorption in the intestine that we must first seek for sources of the thyroid gland's disorder.

The second great source of interference with the thyroid gland's normal operations is disturbance at the threshold of utilization of its products in the tissues. Evidence is beginning to accumulate which suggests that the action of these products may vary at different age periods, in different individuals, and be profoundly influenced by the concentration of certain ions in the cell and tissue plasma. We are accustomed to think of thyroid disease in terms only of "hypo-" or of "hyper-" or of "dys-thyroidism"; but it seems not unlikely that the chemical constitution of the cell and tissue plasma has an importance no less than the paucity or excess or imperfect synthesis of the gland's secretion. Recently Professor Klose of Danzig placed at my disposal two photomicrographs of the thyroid gland from two subjects of "puberty goitre": the one from a case of "unmistakable myxoedema," the other from a case of "unmistakable Graves's disease"; yet both presented histological appearances typical of "primary Graves's disease." It is always dangerous to reason from structure to function, but judged by the histological features of these two specimens both appeared to be glands in active secretion, yet the one was from a case of "hypothyroidism," the other from a case of "hyperthyroidism." Might it not be that the diversity of symptoms in these two cases had its origin in some part outside the gland, and that it was due to biochemical differences in the cell and tissue plasma in these two subjects of puberty goitre? I do not say that this was so; I merely suggest that this point of view is worthy of investigation in regard, not only to puberty goitres, but to other disorders of the thyroid gland. In this connexion one is reminded that severe crises in the course of Graves's disease are sometimes associated with acidosis, and that relief may be afforded the sufferer by measures directed to the relief of the acidosis.

In regard, then, to the causes of thyroid disorder there are these two thresholds to be considered: the threshold of absorption in the intestine, and the threshold of utilization in the tissues. The medium of communication between them is the tissue plasma. Let us now consider very briefly what factors are known to interfere with the normal operation of the thyroid gland at these two thresholds, and to what extent iodine may be expected to counteract their harmful influence.

#### *Disturbances at the Threshold of Absorption.*

1. The gland may become deranged because of the inadequate ingestion of iodine or of tryptophane. Interest at the present time chiefly centres round the former. There may be a deficiency of iodine in soil or in the water supply or in the food. Sophisticated foods, such as white flour, contain little or no iodine; while most cereals and vegetables grown on soil fertilized by artificial manures which are not of marine origin are deficient in this element. Goitre is believed to be due to this deficiency of iodine, whether it be common to all the inhabitants of certain localities or peculiar to some individuals no matter what their place of residence may be. To my mind its etiology is not always so simple as this. Nevertheless, the additional provision of iodine may in such circumstances prevent the occurrence of goitre both in man and in domestic animals. It does not, however, always appear to do so. Thus in parts of New

Zealand, where deficiency of iodine has been definitely traced to the soil and water supplies, and to the food grown on this soil, it has been found by Hercus and Baker that in one locality (Timaru) the prophylactic use of iodine for a period of six months was without effect in preventing the appearance of thyroid swellings in previously non-goitrous school children. In another locality (Christchurch) its use for a period of one year reduced the incidence of first attacks of goitre in children from 55 per cent. in those who did not receive iodine to 39 per cent. in those who did. The point of interest and importance in these observations is that 39 per cent. of previously non-goitrous children developed thyroid swellings, despite the prophylactic use of iodine for a period as long as one year. It follows, therefore, either that iodine want was not the cause of the thyroid swellings in these children, or that there was a failure of absorption of iodine at the intestinal threshold, or an imperfect utilization of iodine by the thyroid gland or elsewhere in the body.

2. Another potent source of goitre is the confinement of animals in unhygienic surroundings which involve the ingestion with their food and drink of substances derived from their own alvine discharges. There is, indeed, no more potent source of hyperplastic goitre than this. Fish confined in dirty tanks, animals confined in dirty cages, goats tethered on the same plot of ground for many months, and man living on ground contaminated by his own excreta and that of his domestic animals, are all subject to goitre. In all these instances the goitres are more prone to arise if the food be on the borderland of insufficiency so far as iodine is concerned; at least we assume it to be so, since in all, or almost all, the goitre is preventable by the additional provision of iodine. The point of importance is this: that an amount of iodine which may suffice to keep the thyroid gland in health when the animals are living under hygienic conditions of life may not suffice to prevent goitre when they are living under unhygienic conditions of life. In the latter circumstances the iodine ingested is relatively insufficient for the needs of the thyroid gland or of the body generally. Looking at the problem purely from the point of view of iodine want, it would seem that the presence of certain bacterial agents or their products in abnormal situations in the gastro-intestinal tract may interfere with the adequate absorption of iodine. McClendon has found that bacteria are capable of removing iodine from organic media containing it. It may be, therefore, that the continual ingestion of such bacteria, as in polluted water, may cause a part of the iodine in the food to be lost by way of the faeces.

But the problem does not end with iodine intake nor with iodine absorption, for Gaylord has shown, in the case of fish confined in dirty tanks, that the goitre from which they suffer can be prevented as well by the addition of arsenic or of mercury perchloride to the water as by the addition of iodine; while I myself have shown that goitre is preventable in like circumstances by scrupulous cleanliness. It would seem that the biochemical products of certain intestinal bacteria may be absorbed into the system and cause such changes in the biochemistry of the blood and tissue plasma as to make the thyroid glands hypertrophy and hyperplasia imperative; or they may cause atrophic and degenerative changes in the gland. They may, in short, cause impairment of the gland's capacity as a machine or disturbances at the threshold of utilization of its products. Many, indeed, are the possible ways—in the intestine, in the gland itself, and in the tissue plasma—in which intestinal bacteria or their products may cause derangement of the thyroid gland besides their probable interference with iodine absorption and assimilation. But in whatever way they act it is clear that the additional provision of iodine in the food is a potent means of counteracting their action.

3. There is a third means whereby disturbances at the threshold of absorption may cause goitre—namely, by want of balance of the food in certain directions. Thus, the excessive ingestion of proteins, or of certain fats, or of both, may cause hyperplastic goitres in animals, and presumably also in man. But here again goitre is much more likely to arise if the animals be of a certain age and if living under unhygienic conditions, or if the diet be such as favours constipation and intestinal putrefaction. In circumstances of protein or of fat excess in the food thyroid hyperplasia is preventable by the additional provision of iodine. There is, however, one exception to this rule: opossums kept in captivity and fed on a protein-rich diet develop thyroid hyperplasia whether or not additional iodine be supplied with their food (Bensley); so that metabolic differences in different species, and possibly also in different individuals, are not without their influence in determining what effect iodine shall have. It may be mentioned that cod-liver oil will prevent thyroid hyperplasia in animals no matter how unhygienic their conditions of life may be. Cod-liver oil not only provides iodine in suitable form, but vitamins in abundance, while it favours the absorption of calcium and phosphorus, both of which have a part to play in ensuring the normal operation of the thyroid gland.

4. Again, the excessive ingestion of lime for prolonged periods may cause the appearance of "colloid goitres" of small size in some animals. This also is preventable by the additional provision of iodine.

It may therefore be stated as a general rule, to which, however, there are exceptions, that goitres arising in consequence of abnormal conditions at the threshold of absorption are preventable by the additional provision of iodine, provided the iodine be adequately absorbed; but this adequate absorption is dependent on a healthy state of the gastro-intestinal tract; and this, in its turn, on the provision of a well balanced food.

*Disturbances at the Threshold of Utilization.*

Turning now to the threshold of utilization: Mention has already been made of the possible influence which the concentration of certain ions in the cell and tissue plasma may have on the action of the thyroid gland's products. There are certain other facts to which reference may now be made. If the thyroid gland be removed in lambs or kids aged 2 to 3 weeks, nothing much happens for eighteen days; thereafter growth ceases (Simpson). And since the phenomena of growth are essentially those of organic synthesis, it may be said that in animals of this age the withdrawal of the thyroid gland's influence impairs organic synthesis and causes the accumulation in the body of the products of an abnormal metabolism. If, however, the animals be 3 or 4 months old growth is but little affected; the withdrawal of the gland's influence is then evidenced chiefly in failure of nutrition of the skin and in loss of intelligence. In these also abnormal metabolites accumulate in the body. The gland's function thus appears to vary with the age of the animal. The effects of thyroidectomy certainly vary with age, with species, with the nature of the food, with the state of nutrition, with external temperature, and other metabolic factors, as Horsley demonstrated in 1885.

Now if instead of removing the whole gland the major part of it be removed in guinea-pigs—an amount sufficient to initiate compensatory hypertrophy in the remainder—then it is found that again nothing much happens for fifteen to eighteen days. Thereafter hypertrophy and hyperplasia occur in the remnant; and this goes on until the deficiency caused by the thyroidectomy is made good, when the regenerated organ settles down to the normal routine of the gland's cycle of activity: storing colloid, resorbing colloid, and secreting moderately and inconspicuously. It is to be noted that the thyroid hyperplasia occurs only after the lapse of a latent period of about eighteen days—that is to say, just at that time when the normal growth and repair of the body tissues are beginning to be imperilled. During this latent period such changes have taken place in the biochemistry of the tissue cells and plasma as to make hypertrophy and hyperplasia of the remnant of thyroid tissue imperative. In this remnant a "goitre" has been produced, inasmuch as it has been called upon to increase its size. The process by which this increase in size has been brought about is, so far as we know, essentially the same as that occurring in the whole gland when parenchymatous goitre is produced. This is an example of how thyroid hypertrophy and hyperplasia may be caused by disturbances at the tissue threshold

—namely, by the presence in the cell and tissue plasma of abnormal metabolites. Similar effects may be produced in the whole gland when similar biochemical changes are brought about at the tissue threshold by other means; as, for instance, by the injection into normal animals of the biochemical products of bacteria, or by the excessive ingestion of these products, or by the absorption of the proteoses produced in the raw surfaces caused by burns, or by the absorption of other abnormal metabolites, as from toxic foci.

### Influence of Iodine in Preventing Thyroid Hyperplasia.

As to the effects of iodine in preventing thyroid hyperplasias such as these, it is generally believed that thyroid hyperplasia is due to iodine want. But in the experiment on guinea-pigs above mentioned hyperplasia occurs in the remnant of thyroid tissue although it has at its disposal all the iodine derived from the food, which sufficed to keep the whole gland in health. It cannot be said, therefore, to undergo hyperplasia because of want of iodine. Further, the additional provision of iodine will not prevent the hyperplasia in these animals; indeed, if anything it tends to increase it (Loeb). It may, however, be modified, but not wholly prevented, by the administration of the preformed active principles of the thyroid gland; while Loeb observed the remarkable fact that it is wholly prevented by the administration of the anterior lobe of the pituitary body. We see, therefore, that the metabolic need which determines the compensatory hypertrophy and hyperplasia is in this case so imperative that no amount of iodine can prevent the thyroid enlargement, and that it is one which concerns other endocrine structures as well as the thyroid gland. Similarly, in dogs iodine will prevent compensatory hypertrophy in the remainder of the gland provided not more than five-sixths of it be removed. But if less than one-sixth to one-ninth be left behind no amount of iodine will prevent compensatory hypertrophy in the fragment that remains (Marine). It would seem, then, that thyroid hyperplasias which result from disturbances at the tissue threshold are not always amenable to control by iodine. In this respect they are in marked contrast to those resulting from disturbances at the threshold of absorption. They are not due to iodine want, nor to a drop in the gland's store of iodine below a certain level; but this drop occurs as a result of the hyperplasia, and the hyperplasia itself is the result of biochemical changes in the cell and tissue plasma.

Etiologically speaking, we have, then, to deal with two types of thyroid hyperplasia: the one, resulting from disturbances at the threshold of absorption, which is usually preventable by the additional provision of iodine in the food; the other, resulting from disturbances at the threshold of utilization, which is usually not preventable by the additional provision of iodine in the food.

So much, then, for what iodine will and will not do in preventing thyroid hyperplasias. I have presented both sides of the picture, since if iodine be used indiscriminately the same fate may overtake it as befell it more than fifty years ago; it may fall into undeserved disrepute unless its limitations be realized. So far as my own investigations permit me to form an opinion, I have come to regard iodine as a substance which initiates and maintains the normal cycle of the thyroid gland's activities—it is, so to say, the oil of the thyroid engine—but I do not regard the efficient working of the thyroid mechanism as a matter solely of lubrication, important though this be.

### Types of Simple or Non-toxic Goitre.

I have observed three types of goitre to arise under experimental conditions in animals: the first, in which there is a balanced exaggeration of all the normal features of the gland's cycle of functional activity—that is, of both active secretion and colloid storage; the second, in which active secretion occurs to the almost complete exclusion of colloid storage; the third, in which colloid storage occurs to the almost complete exclusion of active secretion. The first may be described as hypertrophic goitre; the second as hyperplastic, parenchymatous, or adeno-parenchymatous goitre; the third as diffuse colloid goitre. In animals under experimental conditions the first or purely hypertrophic type is an early stage of the second or adeno-parenchymatous type. It has been observed to arise particularly in young animals kept under insanitary conditions of life or fed on faecal material or on cultures of faecal bacteria. The second arises under similar conditions; its histological features being well marked in older animals and in congenital goitres experimentally produced by feeding the parent throughout pregnancy on cultures of faecal bacteria. It arises also in adult animals, especially if they be kept under insanitary conditions of life, whose food contains an excess of proteins or of certain fats or of both. The third arises in animals whose food contains an excess of lime. These three types of goitre have their counterpart in man:

(1) *Hypertrophic goitre* may be a purely physiological condition occurring in childhood, at puberty, during pregnancy or the menopause, and in the course of ovarian disorder; or it may be pathological, as when it represents the beginnings of adeno-parenchymatous goitre.

(2) *Adeno-parenchymatous goitre* is the true endemic goitre of such mountainous regions as the Alps and Himalayas; it may also occur sporadically.

(3) *Diffuse colloid goitre* may occur sporadically or endemically, the latter usually in lowland areas.

### *Adeno-parenchymatous Goitre.*

The characteristics of this type of goitre are these: it has its favourite endemic haunts in the great mountain ranges of the world; it is associated with certain forms of cretinic degeneration—congenital goitre, cretinism, deaf-mutism, and idiocy; in the regions where it prevails as an endemic it is rarely or never associated with exophthalmic goitre; the incidence of the acquired disease is low in childhood, but increases gradually with advancing years (Fig. 1); it is

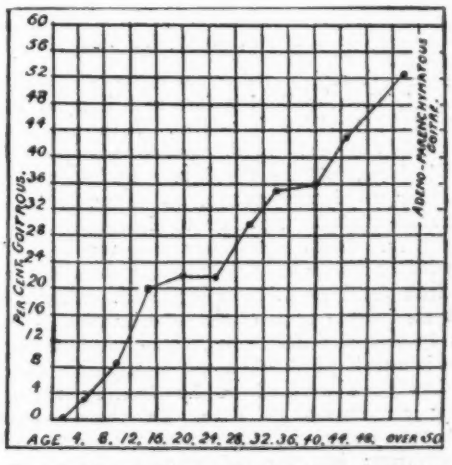



FIG. 1.—Age incidence of adeno-parenchymatous goitre in females: Gilgit, Himalaya.

essentially a hyperplastic goitre; it is of the diffuse, parenchymatous, but often unsymmetrical, type in young subjects; of the adeno-parenchymatous type in older subjects (in the latter the enlarged organ almost invariably contains one or more adenomata); it usually leads to some degree of hypothyroidism in the adult—the cretinic degenerations with which it is associated are the outcome of this thyroid deficiency in the mother; it may be associated, as in Himalayan India, with symptoms referable to other endocrine glands, particularly the parathyroids (endemic tetany and tetanic cretinism are examples); the greater the degree of endemicity the more does the sex incidence approach the ratio 1 to 1, the lesser the degree of endemicity the more does the incidence of the disease in females exceed that in males; newcomers to an endemic area may acquire the disease in as short a period as fifteen days to six weeks, although the "incubation period" is usually longer.

These are the criteria on which the endemicity of this form of goitre is to be based. In Himalayan India, and in other localities where I have had an opportunity to study this malady, it is associated in its origin with insanitary conditions of life, particularly with contaminated water supplies; and is the same disease which occurs under experimental, and like, conditions in animals. It may be that the bacterial agents which are the cause of the disease are favoured in their operation by a deficient intake of iodine in the food and water. This I do not know from actual analysis of the food and water in those regions where I have observed the disease; but judged from the effect of an additional supply of iodine in preventing the hyperplastic goitres which arise in animals under like conditions of insanitation, it seems almost certain that the iodine intake with the food is deficient relatively to the unhygienic conditions of life under which the malady develops in man. It is curable in its early stages by the oral administration of such drugs as thymol. It is preventable by the provision of pure and protected water supplies without increasing the iodine intake with the food. It is to be remembered that the administration of iodine to adults who are the subjects of adeno-parenchymatous goitre is likely to cause hyperthyroidism; this harmful effect of iodine appears, however, to vary in different localities.

### *Diffuse Colloid Goitre.*

This malady may occur sporadically or endemically. It differs in its distribution from the "endemic goitre" of mountainous regions. In this connexion the following passage from De Quervain's writings may be quoted:

> "The histological structure of goitre varies according to locality. In certain countries, especially in level regions, the diffuse colloid goitre, with or without hyperthyroidism, and exophthalmic goitre predominate. In more mountainous countries the toxic goitre is the exception, and the nearer one approaches the centre of the endemic area (as in the Alps and Himalayas) the less one meets with colloid goitre. It is replaced by the colloid-poor, diffuse parenchymatous goitre in childhood and by the adeno-parenchymatous nodular goitre with its degenerative forms in adults."

In general, then, colloid goitre would seem to be most often found in lowland localities. It appears to be the common variety of goitre in America, and possibly also in the British Isles, but in the latter no attempt has been made, so far as I am aware, to separate it from the adeno-parenchymatous type, or to determine the distribution of either. It is commonly associated in the same locality with exophthalmic goitre. It does not appear to be associated with, or to be a cause of, cretinic degenerations; at all events true endemic cretinism is said to be unknown in America (Gordon). The nearest approach to the experimental production of a similar condition in animals has been arrived at by feeding them on food containing an excess of lime. In these circumstances colloid storage occurs to the almost complete exclusion of active secretion: but the enlargements so produced were small, and the amount of lime used to produce them was large. I am not prepared to state that colloid goitre in man is due to such excess of lime in the food or to do more than say that my experimental production of colloid goitre in animals by this means affords some indication of the factors which may be concerned in its causation in man. Colloid goitre in animals is preventable by the additional provision of iodine in the food; it appears also to be preventable by this means in man.

Both adeno-parenchymatous and colloid goitre may occur in the same locality. The only attempt to separate them with which I am familiar is that of Levin in a certain region of the Great Lakes of North America, where he found 1,146 cases of goitre in a community of 1,783 persons. His work has brought to light several very interesting facts in regard to the course and behaviour of these two types of goitre. In one of his charts (reproduced in Fig. 2) he separated the adeno-parenchymatous goitres from the diffuse, non-adenomatous goitres. The latter include the diffuse hypertrophies of childhood and diffuse colloid goitres. It will be observed that the age incidence curve of the adeno-parenchymatous goitre is practically identical with the age incidence curve of the disease as it occurs endemically in Himalayan India (Figs. 1 and 2); in both localities the malady is due to causes the effects of which become more and more manifest as age advances. The other group, which includes the thyroid swellings of childhood and the diffuse colloid goitres, is seen to have its highest incidence in early life, tending to disappear after full maturity has been attained. This tendency is more marked, and sets in earlier, in males than in females. Colloid goitre is thus in marked contrast to adeno-parenchymatous goitre: it would appear to be due to causes whose effects become less and less evident as age advances; adeno-parenchymatous goitre to causes whose effects become more and more evident as age advances. If the former be due solely to iodine want then it would seem that the effects of this want become less conspicuous after full maturity has been attained. If the latter be due solely to iodine want then it would seem that the effects of this want become more conspicuous after full maturity has been attained. There must, therefore, be more in the problem of the causation of these two types of goitre than iodine want.

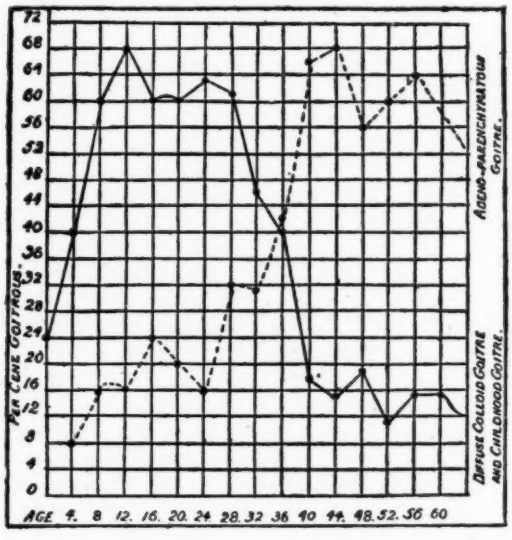



FIG. 2.—Age incidence of (broken line) adeno-parenchymatous goitre, and (continuous line) diffuse colloid goitre, including childhood goitres, in females: Great Lake Area, U.S.A. (After Levin.)

Again, if this be the cause of both types, then we have the remarkable fact of iodine deficiency producing two diametrically opposite effects in the thyroid gland: (*a*) hyperplasia to the almost complete exclusion of colloid storage, and (*b*) colloid storage to the almost complete exclusion, or greatly in excess, of hyperplasia. Yet, paradoxical as it may seem, this can actually occur. Thus, if in adult animals the iodine deficiency be relative to an excess of fats in the food, or to certain conditions of bacterial infection of the intestinal tract, goitres may result in which hyperplasia occurs to the exclusion of colloid storage. If, however, the iodine deficiency be relative to an excess of lime in the food, then colloid storage may occur to the exclusion of hyperplasia. In both cases the administration of iodine restores the normal cycle of the thyroid gland's activities, and for practical purposes both may be said to be due to relative deficiency of iodine. But it is the factors which give rise to the relative deficiency of iodine, rather than the iodine deficiency itself, that are of importance in determining the histological character of the goitre; and, as would seem from the course in man of the two types of goitre with which we are dealing, it is these factors also which determine the persistence of the goitre in the individual. Important, then, as iodine is in preventing either type of goitre, it is to be remembered that, in the causation of both, other factors are concerned which impart to each its own particular characters.

*Childhood Goitre.*

It was my intention, had time permitted, to refer in some detail to childhood goitre, since many of the observations hitherto recorded in regard to goitre prevention by iodine relate to the thyroid swellings of childhood. I must, however, content myself with the mention of a few points. Many of these swellings in children are physiological hypertrophies often normal to the individual, and have no title to be classed as "goitre"—a term which signifies thyroid disease. The great majority of them—as many as 98 per cent. (Olin)—are slight, some so slight that but a fleeting glimpse of the gland's outlines are caught as the child swallows. If all these be classed as goitre a wholly erroneous idea of the prevalence of thyroid disease may be gained. Further, estimates as to the prevalence of goitre may vary within wide limits according to what the observer may regard as a goitre. Thus, in a school where goitre was endemic, I have known the malady suddenly to assume epidemic proportions with the advent of one school medical officer, and the epidemic to disappear as suddenly with the advent of another.

A small minority of thyroid swellings in children are true goitres; in Himalayan India these goitres are conspicuous, often unilateral and right-sided, but sometimes regular and bilateral enlargements of the gland, which not infrequently are associated with engorgement of the veins of the neck; they may persist through puberty into adult life and begin to show adenomatous nodules in their substance as early as the twelfth year. They are as obviously true "goitres" as similar swellings in older subjects. "Childhood goitres" attain to their highest incidence in boys at the age of 9 and in girls at the age of 10 in Himalayan India; but the peaks of highest incidence appear to differ in different localities and appear also to be related to the prevailing type of goitre. Thus, where colloid goitre is the prevalent type, childhood goitre is said to be at its highest incidence in boys about the age of 8 to 10, and in girls about the age of 12. The incidence of thyroid enlargement in children below the age of puberty is not of itself a true index of the endemicity of goitre; its incidence may be low and yet the endemicity of adeno-parenchymatous goitre be high, or the incidence of childhood goitre may be high and yet goitre may not be a conspicuous feature in the adult population.

The incidence of childhood goitre is only of value as evidence of prevailing thyroid disease when considered in relation to the other criteria of endemicity and to the prevalence of goitre in the adult population. A marked characteristic of the thyroid swellings of childhood is their tendency to spontaneous disappearance. This tendency varies in different localities, and is probably related to the prevailing type of goitre; in endemic foci in Himalayan India I have found 11 per cent. of these swellings to disappear spontaneously in boys and 9 per cent. in girls; Nicholson has placed the figure as high as 50 per cent. in a certain endemic area in the Himalayan foot-hills; while Bircher reports that although 70 to 100 per cent. of children may be the subjects of swollen thyroids in certain parts of Switzerland, not more than 3 to 9 per cent. of young men are rejected because of goitre when they present themselves for military service. It is necessary to bear these facts in mind, not only when inaugurating iodine prophylaxis in any locality, but when attempting to form an estimate of its value.

## CONCLUSION.

I have endeavoured to indicate the broad lines on which we must, in my opinion, view diseases of the thyroid gland. It is, I believe, rare that any metabolic disorder such as goitre is due to a single cause. There is, as a rule, a multiplicity of factors involved. The thyroid gland cannot be considered apart from the rest of the body, nor iodine apart from other food constituents. The time has come when we must search more closely for causes of the thyroid gland's disorders in disturbances at the threshold of absorption in the intestine, in disturbances at the threshold of utilization in the tissues, and in disturbances in the cell and tissue plasma of the gland itself.

# An Address
ON
# DUODENAL AND GASTRIC ULCERATION:
## *SOME PERSONAL EXPERIENCES.**

BY

T. P. DUNHILL, C.M.G., M.D.,

ASSISTANT DIRECTOR, SURGICAL PROFESSORIAL UNIT, ST. BARTHOLOMEW'S HOSPITAL.

(*With Special Plate.*)

I HAVE chosen this subject for two reasons. In the first place, whether we be general practitioners, physicians, or surgeons, its problems are constantly coming before us, and have to be dealt with. No one can believe that the methods of treatment are so standardized that the right and only thing to be done in each instance is settled, and we have all lived long enough to know that what we have done has not invariably turned out to be the best. Men of large experience have written and spoken extensively on this subject, and I make no pretence of saying the final word on this occasion; but we each in our different capacities have to accept responsibility towards those patients who come to us for advice. In the second place, I have for some years tried, in conjunction with my colleagues, to attain the maximum degree of accuracy in diagnosis of gastric and duodenal ulcers by means of *x*-ray examination. The skiagrams are typical of the results that are to be expected whenever a patient is well enough to have the examination made.

I shall not attempt to cover all the ground. This short address must perforce be discursive. In any surgeon's experience sometimes questions of diagnosis appear to him to be of rather more than ordinary interest; the result of *x*-ray examination often surprises him; and always he has to adapt his surgical procedures to the material which confronts him. It is around these aspects of the question that I propose to speak.

Before saying anything more I want to acknowledge my personal debt to Sir Berkeley Moynihan (whose work has always been open to visiting surgeons, and whose friendly help has been given to many of us), to Mr. Sherren, and to Mr. William Mayo. To some extent we evolve our individual methods in the course of dealing with our own patients, but certain trails have already been blazed for us, which lessen our anxieties and save our patients from some dangers. To these pioneers our debt is deep.

In dealing with gastric and duodenal ulcers, as with osteo-arthritis, exophthalmic goitre, tuberculosis, and many other diseases, the aim of our profession is to prevent their occurrence, and one by one we may hope to see them disappear; but in the meantime we find our patients seriously ill, being already in a condition which hampers their activities, gives them pain, and puts their lives in danger. Usually they have not consulted a surgeon until their disease has become well established, but many of them have come to you earlier, and some of them reach the surgeon without having had sufficient guidance. Therefore etiology should always be present in our minds. The hygiene of the mouth, arrangement of diet, treatment with drugs, limitation of smoking, and proper rest, may cure in the early stages, and will relieve in all. No surgical operation should be undertaken until all these points have been attended to; for by these means operation may sometimes be rendered unnecessary, and operation will fail to achieve its object if the cause of the condition is not removed.

At what stage, then, are we to say, "This patient should be subjected to operation?" For myself, that time is when the patient, in spite of efficient medical treatment, suffers

* Given at Felixstowe to the Suffolk Branch of the British Medical Association, October 31st, 1924

so much pain or inconvenience that work cannot be carried on, sleep is interfered with, and life becomes a burden. The symptoms may never have responded to treatment, or may have recurred from time to time in spite of it; or certain complications may occur which force our hands.

The cases which I propose to discuss are all such as have reached the stage at which, in the judgement of physician and surgeon, the time has come for surgical help in treatment. I put it in that way because it is only "surgical help" in treatment. These patients are not all cured by operation in the way a person is cured who has had an appendix removed during an attack of appendicitis, or cholecystectomy performed for a stone impacted in the cystic duct. A great many are cured; others are so greatly improved that, with ordinary care and some guidance, pleasure in life is regained and work can be carried on with zest. A few have had so large a part of their stomachs destroyed by a long-standing callous ulcer that, whatever method of operation may have been adopted, they are still not normal beings afterwards; they will have been relieved of their intense pain, but will always require guidance in feeding. Then, again, occasionally a gastro-jejunal ulcer will follow a gastro-jejunostomy. It is therefore obvious that there should always be the closest co-operation between physician and surgeon if the patient is to derive the benefit he has the right to expect from our profession.

In an uncomplicated case of duodenal ulcer the symptoms are characteristic. Even in the clearest cases it is satisfactory to have a skiagram which demonstrates the lesion. Fig. 1 is from a patient (of Dr. Morison) whose symptoms might have been taken from a textbook, so accurately did they fit in with the recognized picture. He had pain two hours after a meal, more food always "sending it away." He regularly had an attack of acute pain at 3 or 4 o'clock in the morning, which he would relieve by taking an alkaline mixture; he would then go to sleep again. He had the usual periods of complete freedom from pain. The skiagram shows the distortion of the duodenum, with the barium mixture trickling past the obstruction in a thin stream, and filling the duodenum farther on. But I find that many of the patients, by the time they reach the surgical ward of a hospital, do not give this clearly cut history. In some it can be elicited by careful investigation; in others I fail to obtain it.

Pain such as we expect has been absent in one group of cases. In illustration of this group I show skiagrams of a man and woman, both of whom discovered blood in their stools. From the man I could only get the slightest history of indigestion, and he had not troubled to modify his food as so many patients do; but the melaena had occurred frequently enough to alarm him. The woman stated that she had "queer feelings" two hours after a meal, but her own description of it was that "it was like someone pushing a fist into her back." I could not get an admission from her that she suffered any pain, or that there was abdominal discomfort. Her haemorrhages had been severe. The man was aged 46 and the woman 58. The most common cause of severe melaena is duodenal ulcer; but from the history I could not otherwise satisfy myself of the presence of duodenal ulcer. A skiagram of the man (Fig. 2) gives a cruciform picture from the distortion of the first part of the duodenum. Fig. 3 is a skiagram of the woman, showing the crater of an ulcer filled with barium. In cases of this kind a good skiagram gives conclusive evidence, such as can be obtained in no other way, and it shows the extensive duodenal ulceration that may occur without pain.

As opposed to the cases with unusual freedom from pain, there are others in which pain is atypical in time or intensity, either because of the complications of the lesion itself or of associated conditions. A man was known to drink more wine than he should, and to do so throughout the day. For the last two or three years he had taken considerably too much. During the last eighteen months he had had severe bouts of pain in the upper abdomen with vomiting. It began each time with a feeling that he was not fit, and that an attack was imminent. After a day or two this deepened into pain right across the upper abdomen, which steadily increased in severity and never stopped except when he vomited, which he did several times a day. Vomiting gave relief for an hour or two, the pain then gradually returning. The intense stage of the attack lasted about three days, and then the pain and vomiting subsided. He was closely questioned as to any relationship between the pain and food, but none could be detected. I believed his attacks to be due to alcoholic gastritis, but I suspected that he might have gall stones, for when the pain was present it was continuous, and when the attack passed his digestion was good. Exploratory operation was performed rather under protest, and a very large duodenal ulcer was found, the inflammatory mass being firmly adherent to the head of the pancreas and the neck of the gall bladder. The liver was cirrhotic. These symptoms were quite unlike those usually present with duodenal ulcer. The patient had been examined by the *x* rays before I saw him. I believe a skiagram by an efficient radiographer would have definitely demonstrated the lesion.

An ulcer on the free surface of the duodenum may perforate, but this we are not considering to-day. Apart from perforation its base may become adherent to neighbouring structures and surrounded with an inflammatory mass; Fig. 4 illustrates such a case. A narrow channel filled with barium mixture is seen over a considerable length in the pyloric region; the stomach is filled proximally to it, and the duodenum ballooned distally to it, implying the presence of the rigid inflammatory mass which surrounded the duodenal region and showing the barium filling the deep narrow penetrating ulcer. (This skiagram will be referred to more than once later. It presents points of resemblance to gastric carcinoma, also it shows two calcified tuberculous glands above the lesser curvature.) The ulcer, if not on the free surface, may penetrate deeply posteriorly, producing a large inflammatory mass, which may involve, and not infrequently penetrate, the head of the pancreas. Either of these conditions may induce pain which is intense and almost constant, quite unlike the typical pain of duodenal ulcer.

When these conditions have caused narrowing of the lumen of the duodenum, the signs and symptoms of retention of gastric contents are added to those of ulcer. Furthermore, there are sometimes other signs associated with these last mentioned conditions which may be perplexing. I call to mind five men, each of whom had a palpable tumour, seeming to be a little larger than a golf-ball, movable within limits. A distinguished American surgeon has made the pronouncement that when a tumour of the stomach is big enough to be felt it is too late for surgical cure. All of these men had apparently reached that stage. In each the condition was associated with pain which had become very constant. Whether a lump is due to a neoplasm or an inflammatory mass some stenosis is always present, and in each of these there was evidence of gastric retention. One man had vomited constantly for ten days. Another carried a stomach tube in his pocket, and drew off the stomach contents as soon as the pain became intolerable. A third had vomited so constantly for so long a time that his medical attendants regarded surgical intervention as being quite impossible. In these three patients emaciation was extreme; in the other two vomiting and wasting, though present, were not so marked. Fig. 5 shows a pool of barium mixture lying at the bottom of an enormously distended inert stomach; the barium-filled crater of the duodenal ulcer is seen above and to the left.

It is extremely difficult in the presence of a palpable tumour to come to an exact diagnosis between carcinoma at the pyloric end of the stomach and duodenal ulcer penetrating deeply and surrounded by a mass of inflammatory tissue. The inflammatory condition does not necessarily fix the tumour. The history may be long or short. A long history suggests the possibility of a gastric ulcer which has become malignant, a short one that the lesion is unlikely to be an ulcer and has been a carcinoma from the first.

Does *x*-ray examination help us in these cases? Some patients are far too ill for investigation to be made at the time when the surgeon first sees them. Two of these five

FIG. 1.—Stenosis in first part of duodenum. (Skiagram by Dr. Vilvandre.)

FIG. 2.—Duodenal ulcer; a not infrequent type of distortion with ballooning beyond. (St. Bartholomew's Hospital skiagram.)

FIG. 3.—Duodenal ulcer. Crater filled with barium mixture. (St. Bartholomew's Hospital skiagram.)

FIG. 4.—Duodenal ulcer; stenosis. Crater filled with barium emulsion. Ballooning of duodenum beyond stricture; indentation of pyloric end of greater curvature simulating filling defect of cancer. Two calcified tuberculous glands at cardiac end of lesser curvature. (Skiagram by Dr. Vilvandre.)

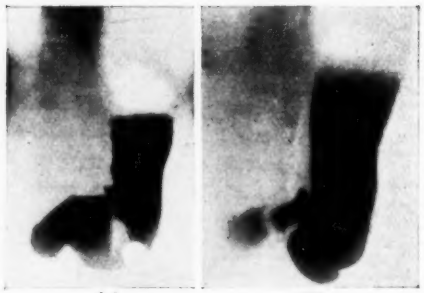
FIG. 5.—Large circular ulcer of duodenum filled with barium mixture. Pool of barium mixture lying in a big atonic stomach. (St. Bartholomew's Hospital skiagram.)

FIG. 6.—Carcinoma of pyloric segment of stomach, showing filling defect. (Skiagram by Dr. Vilvandre.)

FIG. 7.—Marked stenosis of commencement of the duodenum due to ulcer, associated with great dilatation of the stomach and emaciation; death from bronchopneumonia following operation. (Photograph by Miss Vaughan.)

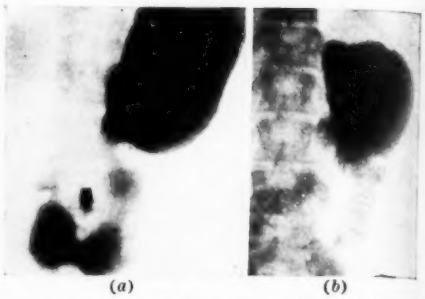
FIG. 8.—Hour-glass stomach with saddle-shaped gastric ulcer: upper part invading left lobe of liver; lower part invading pancreas. Sleeve resection. Patient perfectly well. (St. Bartholomew's Hospital skiagram.)

FIG. 9.—Very narrow hour-glass constriction. Sleeve resection. See Fig. 10. (St. Bartholomew's Hospital skiagram.)



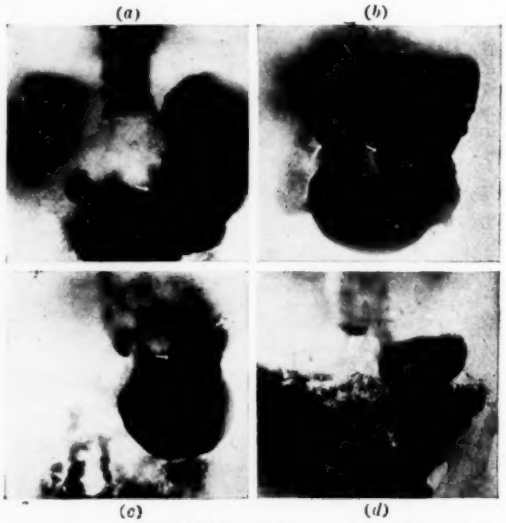
(*a*) (*b*)

FIG. 10.—(*a*) The same patient as Fig. 9 one month after operation, showing filling defect caused by the inrolling of the approximated edges of the stomach by the Lembert sutures. (*b*) Twelve months later; the filling defect has disappeared, the shape and motility of the stomach are practically normal.



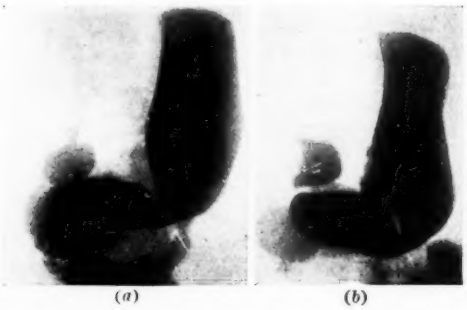
(*a*) (*b*)

FIG. 11.—(*a*) Hour-glass constriction of stomach. (*b*) The stomach after the Polya-Balfour type of operation. (St. Bartholomew's Hospital skiagrams.)



(*a*) (*b*) (*c*) (*d*)

FIG. 12.—(*a*) Immediately after a meal. The gastric ulcer is shown at the middle of the lesser curvature. Notice also the barium entering the cardia. (*b*) Two hours later; the gastric and duodenal ulcers are both shown. (*c*) The same patient after six hours. Both ulcers are shown. (*d*) At eight hours after the meal. The duodenal ulcer crater is filled and there is considerable residue remaining in the stomach. The gastric ulcer was proved on microscopical examination to have become malignant. (Skiagrams by Dr. Salmond.)



(*a*) (*b*)

FIG. 13.—(*a*) Deep incisura extending from lesser curvature, showing narrowing of stomach at the site of a healed ulcer which had been active thirty years previously. (*b*) Skiagram taken three months after (*a*). The gall bladder contained calculi. (Skiagrams by Dr. Salmond.)

FIG. 14.—An ulcer below and behind the lesser curvature. With a thick meal it is only seen on rotating the patient almost transversely. (St. Bartholomew's Hospital skiagram.)

FIG. 15.—? Ulcerated diverticulum at cardiac orifice of stomach in a tuberculous patient. Inset: Diverticulum still filled with barium mixture after stomach is practically empty. (New Lodge Clinic skiagrams.)

had been steadily getting worse until the operation had to be performed as an emergency measure. If the patient is not too ill, *x*-ray examination may settle the diagnosis. Fig. 5 is obviously the picture of a large duodenal ulcer with such degree of associated stenosis that the peristaltic vigour of the stomach had diminished and atony resulted. But if Fig. 4 be compared with Fig. 6 it will be seen that the problem is more difficult. The history was identical in each of these two cases, and the age practically the same—about 60 years. In each a tumour could be felt of the same size. Each moved with respiration and was mobile apart from respiration. In each the skiagram appeared to show a filling defect at the pyloric end of the stomach; the indentation of the wall in this area and the narrowing of the pyloric region over a considerable length may be noted. From the skiagram I believed the condition in Fig. 4 to be carcinoma, and I was sure that Fig. 6 indicated the same. Both patients were too ill for a complete operation to be performed at one time. In each gastro-jejunostomy was performed in order to tide the patient over the emergency. In each the tumour was seen and palpated, and in each it appeared to be carcinoma. In one a carcinoma was removed a fortnight later. In the other the second operation was delayed on account of lung complications, and when the abdomen was afterwards opened for the partial gastrectomy all signs of the tumour had disappeared, the pylorus and duodenum being then soft and unscarred. (The deeply penetrating ulcer shown in Fig. 4 had been on the posterior surface.)

It is easy to be wise after the event. In a review of these cases it should be realized that in Fig. 4 the barium entered a long narrow ulcer cavity, quite unlike the cavity of a carcinomatous ulcer; the inflammatory mass surrounding this had thickened, hardened, and indented the stomach wall in its vicinity, and given a skiagram bearing a considerable resemblance to that produced by the carcinoma in Fig. 6.

An associated pathological condition will alter the characteristic history of duodenal ulcer. We have all seen a gastric and duodenal ulcer in the same patient. Moynihan[1] states that a duodenal ulcer is present in 12.3 per cent. of all cases of gastric ulcer. Tuberculous glands are also not infrequently found. Fig. 4 shows, in addition to the duodenal ulcer, two calcified glands along the line of the lesser curvature of the stomach. These may not only make the history less clear, but make the prognosis less perfect. Needless to say, when an abdomen is opened the search for other pathological conditions should be very thorough, even though the ulcer is obvious; for if tuberculous glands are present—as they have been in several of my cases—and are not discovered, the surgical treatment may be deemed to have failed, while actually the remaining symptoms are due to other causes.

In at least two conditions special care is required in planning surgical interference. These are: (1) extreme emaciation from increasing pyloric stenosis with consequent starvation, and (2) repeated haemorrhages. On four occasions I have been able to perform a gastro-jejunostomy very easily and quite successfully with local anaesthesia, when the patient appeared to be too emaciated and weak to justify the use of general anaesthesia; on one occasion I lost, through lung complications, a patient who I believe would have been saved if I had used local anaesthesia. He was the patient who had either vomited or emptied his stomach with a tube every day for many months in order to relieve his pain, and he was emaciated to a skeleton. Fig. 7 is a photograph of the organs removed at autopsy. The first part of the duodenum is seen to be narrowed. It is very thick-walled and the lumen is almost obliterated. Sometimes a patient recovers from repeated haemorrhages sufficiently to undergo operations safely, but occasionally it seems impossible to control the haemorrhage from the ulcer, and day by day the patient becomes weaker and paler. These patients have several times been rendered fit for the appropriate surgical measures by means of blood transfusion.

In gastric as in duodenal ulcer there are long periods of latency, which lead patient and practitioner to believe that the pathological condition has disappeared. There may be some cases in which the ulcer has healed, but there are many in which it has not. Again, as in duodenal ulcer, the history of gastric ulcer in its early stages is much more characteristic than in the later stages. In many cases which come to the surgical wards of a general hospital the characteristic history has long passed, and the story may have to be reconstructed from the patient's memories of long ago. One man recently came to us who twenty years before had had the orthodox symptoms—pain an hour and a half after food, lasting half an hour, disappearing before the next meal. He had continued in this state for fifteen years, being sometimes better, sometimes worse. Then a severe haemorrhage rendered his admission to hospital necessary. He was discharged "cured." Still later—twenty years after the onset of the first symptoms—there was another attack of haemorrhage, and from this time onwards he was scarcely ever free from pain, day or night. The pain, the sleeplessness which the pain induced, the inability to take food, the loss of blood (which could always be detected in his stools), and the resulting exhaustion made him pallid, emaciated, and very ill. During all this time the ulceration had been slowly progressing; the base of the ulcer became adherent to and eroded the body of the pancreas, while surrounding inflammation in the wall of the stomach resulted in the formation of an hour-glass stomach.

When once these ulcers have penetrated the gastric wall so that the base is formed by structures outside the stomach, the reaction surrounding them may be intense, and the inflammatory products constitute a mass which may fill the upper left quadrant of the abdomen, and extend below the umbilicus. This area will be rigid and without movement on respiration. The rigidity and the tenderness may prevent any effective examination of the abdomen. In one patient of this type pain occurred within a few minutes of taking food and lasted about two hours. He would vomit at any time during this period, but obtained only slight relief. The pain was violent; it "doubled him up," and prevented him from sleeping; he was afraid to take any food except egg and milk. He obtained a little relief by lying in the left latero-prone position. Four weeks before admission to hospital he had vomited blood. He was far too ill for an *x*-ray examination to be made. He presented the picture of late malignant disease of the stomach, but because of his age (34) his abdomen was explored. There were enlarged glands in the great and lesser omenta. A large hard mass involved the lesser curvature and posterior wall of the stomach and extended up to the cardia; it appeared to be infiltrating the left lobe of the liver. A partial décollement was made in order to examine the stomach from below; it was found to be firmly fixed to the pancreas. The condition was regarded as malignant and inoperable. Three glands were removed for examination and the abdomen closed. The glands were found to be non-malignant, and the patient improved sufficiently to enable an *x*-ray examination to be made. The result is shown in Fig. 8. The barium mixture is seen filling a large ulcer crater above the lesser curvature; the base of this was formed by the liver, and opposite this, bulging below and overlapped by the greater curvature, is seen the edge of a very large barium-filled crater which had burrowed into the pancreas. The middle third of the stomach immediately below these ulcers was almost obliterated. When the stomach was dissected off the liver and pancreas scarcely any middle third remained. The free edges of the proximal third were very ragged and the induration along the lesser curvature and posterior wall extended almost to the cardiac orifice. The patient suffered from marked aortic disease, and as the distal third of the stomach was healthy it seemed wise to save time by trimming off the ragged indurated edges and joining up the two ends of the stomach. This patient is quite well two and a half years after the operation.

Even when patients are not so ill as in the last case the diagnosis is not always easy. In women it has not infrequently happened that the pains have been so much worse about the menstrual periods, and have appeared not to be so definitely related to food, that attention has been directed to other organs of the body. Of two women who came for treatment, one had had four, and the other three,

previous operations on the lower abdomen and pelvic organs; all these operations were for pain, which was ultimately proved to have been due to gastric ulcer. In one of them the skiagram shows an extremely narrow hour-glass constriction; this case is interesting in that the ulcer perforated immediately above the site of constriction. The hole was big enough to admit a finger, and the stomach contents were mixed up around and between the adhesions consequent on three previous abdominal operations (one of which unfortunately had been a double oöphorectomy). The perforation was closed, and, as soon as the patient was fit for it, an *x*-ray examination was made. The result is shown in Fig. 9. It was realized that this patient would be in a precarious state if the stomach were left in this condition. It was known that the abdomen was matted with adhesions rendering it difficult to apply the jejunum to the proximal end of the stomach, so it was decided to perform a sleeve resection. The resulting shape of the stomach soon after operation is shown in Fig. 10*a*. At this early stage the filling defect in the stomach outline caused by the inrolling of the approximated edges of the stomach wall by Lembert sutures is seen. The stomach functions well, and the patient has since married. A recent photograph has been obtained showing the stomach shape and motility to be practically normal (Fig. 10*b*).

It is not often possible to apply stomach clamps in the manner figured in textbook illustrations of sleeve resection. The cases in which clamps can be applied rarely require sleeve resection, and in those which demand it the surgeon must use all the skill of which he is possessed to cobble together the distal third on to the ragged remains of the proximal piece, so that the posterior wall may be safe and efficient. In the patients upon whom it has been found necessary to perform sleeve resection on account of the exigencies of the condition the late progress has been quite good. Fig. 10*b* shows a stomach in which abnormality can scarcely be detected.

Usually in cases of hour-glass stomach due to ulcer in the middle third, when the case has been carefully worked out, and the *x*-ray examination—fixing the site of the ulcer and the degree of mobility of the stomach—has enabled the operation to be properly planned before the abdomen is opened, a partial gastrectomy is performed, the proximal end of the duodenum is closed, and the jejunum anastomosed with the open end of the remaining piece of stomach—Balfour's modification of the operation originally planned by Polya. Figs. 11*a* and 11*b* show the hour-glass constriction, and the condition of the viscera subsequent to operation. This operation has proved to be most satisfactory in the cases which have been severe enough to necessitate it. I believe the patients are more free from subsequent discomforts than after any other operation for gastric ulcer in this situation. The only disadvantage I have found is that in a few cases the size of the meal has to be restricted. If this is regarded the patients are happy, and as this operation has usually been performed for very disabling pain they do not mind the slight restrictions. Some are so hungry afterwards that, as one man put it, "I really cannot keep myself away from food."

I have already mentioned the simultaneous occurrence of gastric and duodenal ulcer. Figs. 12 *a*, *b*, *c*, *d*, show the appearance on *x*-ray examination of such a dual condition: 12*a* is immediately after the meal; 12*b* in two hours; 12*c* shows the condition almost unchanged in six hours; and at eight hours (12*d*) there is still a barium residue in the crater of the duodenal ulcer. At operation the gastric ulcer was found to be about one and a half inches in diameter and an inch in depth. Examination of the specimen showed that it had penetrated into the body of the pancreas. The duodenal ulcer was on the posterior inferior aspect of the first part of the duodenum; that also is a considerable ulcer. A finger could invaginate the anterior wall of the viscus into the crater of each ulcer easily. The skiagram 12*a* shows barium in the oesophagus and entering the stomach, so that the position of the cardia is defined. It also shows that there is probably sufficient of the proximal part of the stomach still unaffected to permit a partial gastrectomy. The Polya type of operation, planned to include both ulcers, appeared to be the most suitable procedure for the condition, and it was performed. The concave floor of the gastric ulcer consisted of pancreas. It was wiped clean, and a layer of great omentum tacked over it with a catgut stitch after the stomach had been dissected free from it. When this man was seen by his latest consulting physician before operation he stated that he had no pain in his abdomen, but an intense pain deep in the middle of the right side of his chest and in his right shoulder-blade, and that it had no relation to food. It had become constant and unbearable. Microscopical examination of the gastric ulcer showed that it had become malignant, thus bearing out the statement that gastric ulcers more than one inch in diameter are prone to be malignant.

Figs. 13*a* and 13*b* are shown to illustrate the permanent change which may occur in the shape of a stomach with the healing of a chronic ulcer. These two skiagrams were taken with an interval of three months between them. A similar picture is given on each occasion—a deep narrow incisura cutting into the stomach from the lesser curvature. This was unaffected by peristaltic waves. On other films of this patient the outline of the gall bladder can be easily seen. Thirty years previously he had suffered from a gastric ulcer. He had been seriously ill for six months and an invalid for two years. After four years he could take ordinary food, but often suffered from indigestion. Twelve months before these skiagrams were taken discomfort after food became more insistent, but the symptoms were rather suggestive of gall stones. At operation the gall bladder was found to contain many gall stones. After dealing with this, and removing a firmly bound down appendix, the stomach was opened in its long axis across the constriction for two and a half inches. This was to determine if there was any active ulceration present, and to restore a normal shape by suturing the incision transversely to the long axis of the stomach. The ulcer had healed, the stomach wall was soft, but the stenosis was such that it would just about admit a thumb.

Fig. 14 is the skiagram of an ulcer which, in the days when a large barium meal was given, instead of the small fluid meal, might only be discovered by a lateral view of the patient. The position of the vertebrae shows how much this patient was rotated before the ulcer became visible.

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In one case of persistent haemorrhage from a gastric ulcer the ulcer was so high that on opening the stomach and emptying it by suction it was impossible to reach and underrun the spot where the oozing was readily seen. It was reached by a long-handled cautery at a dull red heat and the bleeding was seen to stop. A gastro-jejunostomy was performed to prevent gastric retention and allow alkaline intestinal fluid to enter the stomach. I am not persuaded that either of these reasons is physiologically sound, but the patient—who for a month had been incapacitated and who at the time of the operation was moribund—has been working as a stevedore ever since.

Haematemesis due to acute ulcer seldom requires operative interference. Rest, medical treatment, and, if necessary, blood transfusion, has, in our experience, been sufficient to arrest the condition and recovery has followed; but with a chronic ulcer it is often otherwise. In spite of rest and blood transfusion the haemorrhages may continue with fatal result. In an increasing number of this class of patient we have been able to operate with success.

I have seen one case of syphilitic ulceration—a patient under the care of Dr. J. H. Drysdale. The patient suffered from gastric symptoms, and *x*-ray examination revealed the presence of a gastric ulcer. The Wassermann test was positive, and the symptoms cleared up with appropriate treatment.

In another case the diagnosis is not yet absolutely settled. In Fig. 15 a sacculus opening into the stomach close to the cardiac orifice is shown filled with barium emulsion. Inset is shown the cavity still filled with barium after the stomach had emptied. Severe haematemesis had occurred, presumably from this, and I had been asked to take in the patient. Dr. Hurst believes the condition to be ulceration in a diverticulum of the stomach. The patient was subsequently found to be suffering from phthisis—from which she is recovering, so that further opportunity for *x*-ray examination will probably be possible.

Five cases of gastro-jejunal ulcer have come under my care. Of these, one was the patient mentioned above, upon whom I operated after repeated severe duodenal haemorrhages extending over a month and increasing in severity. He was therefore very much debilitated when the operation was performed, and recovery was slow; whether this influenced the formation of the gastro-jejunal ulcer I am not prepared to say. Another case followed an operation which I performed for a perforated duodenal ulcer. The perforation was closed and a posterior gastro-jejunostomy made. Two years later an ulcer at the site of the stoma perforated. As far as I know these are the only two which have followed my own operations. In one other case I found strands of infected silk hanging into the lumen of the stoma from several ulcerated areas, and the whole circumference was thickened by the infection and granulation tissue surrounding the buried part of the silk. Operation for this condition is very difficult. There is always an inflammatory mass in the mesocolon surrounding the base of the ulcer. Often it is closely adherent to the colon, and separation of this is never easy. The stoma is freed from the mesocolon and the jejunum separated from the stomach; the opening in the jejunum may be closed and some variation of the Polya operation performed, or the jejunum may be divided and the operation completed as described by Sir Berkeley Moynihan.

*X*-ray examination with a barium meal has become a valuable procedure. Some years ago we were glad when positive evidence was obtained, but we did not expect too much from the method. If the surgeon and radiologist work together, evidence is obtained by a screen examination which is not always recorded on films or plates, and operation is now not often performed if there is no *x*-ray evidence of ulcer. Some patients are too ill for the examination to be made. If it is done by an unskilled radiologist the findings may be worse than useless, because inaccurate evidence is actually misleading. If ulceration is present, distortion of the outline of the viscus is sometimes seen (Figs. 1 and 2); a deposit of barium may remain in an ulcer crater (Figs. 5 and 13*b*). X-ray examination not only establishes the diagnosis, but also shows the position of the lesion, and knowledge is obtained of how much of the viscus appears to be normal, so that the type of operation may be considered, and perhaps definitely planned before the abdomen is opened. If a dual condition is present, as in Fig. 4 (duodenal ulcer with tuberculous glands) or Fig. 12 (gastric and duodenal ulcer), the surgeon is forewarned.

Of these skiagrams some have been reduced to a size appropriate for publication by Miss Vaughan in the Dunn Laboratories of the Professorial Units at St. Bartholomew's Hospital, and some by Kodak, Limited.

REFERENCE.

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# A COMPARISON OF DRIED, EVAPORATED, AND FRESH COW'S MILK: *AN EXPERIMENTAL STUDY.*

BY

GLADYS ANNIE HARTWELL, D.Sc.

(From the Physiological Laboratory, Household and Social Science Department, King's College for Women, Kensington, London.)

AT the present time there are many varieties of dried, evaporated, and condensed milks on the market. As it seemed possible that there might be fundamental differences between various sorts of dried and evaporated milks, a series of feeding experiments on animals have been made.

Sherman, Rowe, Allen, and Woods,[1] experimenting with rats, observed that "with bread and milk there was continued growth at a normal rate to full adult size." It seemed possible, therefore, to compare the different kinds of evaporated milk by feeding rats on each kind of milk and bread as the sole diet. According to a report of the Medical Research Council (1924) on the presence of vitamins in different varieties of milk, vitamins A and B are quite well represented, but vitamin C may be absent, or only traces present, in evaporated (condensed unsweetened) and dried milks.

Simmonds[2] concluded that the rat does not need the antiscorbutic factor for normal development, and that a diet of milk and bread might be expected to contain all the essential constituents of a complete diet for this animal. The experiments here described were started when the rats were just weaned (three weeks old), and were continued for twenty-two weeks, during which time several litters were born and reared. I regard it as a more searching test of the adequacy of a diet if gestation and lactation are included, and the experiment made not merely for the actual growth period. Mitchell,[3] in his article on the nutritive value of proteins, pointed out that the demands of growth, gestation, and lactation are all separate problems as far as the biological value of protein is concerned, and it is highly probable that this applies equally to all food factors.

## EXPERIMENTAL.

The experiments were made on the following lines:

### (*a*) *Animals and Method of Experiment.*

Rats were used in these experiments. They were all bred in the laboratory[4] and were all in equally good condition at the beginning of the experiment. Twelve animals, six males and six females, were fed on each diet. They were kept in a large cage together, so that breeding could take place as soon as the rats reached maturity. Each animal was weighed every day (except Saturday and Sunday) for the first few weeks, and after that, when growth was less rapid, only once a week. They were fed once a day. The females were removed to separate cages before the birth of the young. As far as possible, the method we adopt is to remove a doe from the large cage two or three days before the birth of the litter. She suckles her young for twenty-one days, after which she is returned to the large cage. If the young do not survive (as may happen when the diet is poor) the doe is returned to the large cage again when all her young have died. Rats have large litters, and our custom is to reduce the number of young to six on the second day, in order to prevent any undue strain on the mother rat, and to make the growth curves of the young comparable. The combined weight of even six babies towards the end of lactation may exceed that of the mother rat, but on a suitable diet she is capable of rearing her offspring without detriment to herself. From the second day onwards, the mother and her young are weighed daily; she is given ample food, all constituents of the diet being well mixed in the form of a paste.

### (*b*) *Foods.*

1. White bread bought from a baker was used, no crust being given. The bread was weighed one day old.

2. *Milks.*—The fresh cow's milk used was of good quality, was delivered in a bottle, and on standing always showed a large amount of cream. It was heated to 70° C. before being given to the animals. Of dried milks a well known brand (referred to as sample A in a previous paper[5]) was chosen as being a variety largely used by the general public. The brand of evaporated, non-sweetened milk chosen was selected because it appeared to be a popular article.

3. *Proportions.*—The evaporated milk was diluted according to the directions on the tin, and the specific gravity of this reconstructed food was approximately that of fresh cow's milk. With the dried milk 12 grams of solid were mixed with 100 c.cm. of water. This is approximately the amount of solid required to imitate 100 c.cm. of whole milk. My object was to use such amounts as would be used by the general public, following the directions given on the tin. Thus, when told to measure one

previous operations on the lower abdomen and pelvic organs; all these operations were for pain, which was ultimately proved to have been due to gastric ulcer. In one of them the skiagram shows an extremely narrow hour-glass constriction; this case is interesting in that the ulcer perforated immediately above the site of constriction. The hole was big enough to admit a finger, and the stomach contents were mixed up around and between the adhesions consequent on three previous abdominal operations (one of which unfortunately had been a double oöphorectomy). The perforation was closed, and, as soon as the patient was fit for it, an *x*-ray examination was made. The result is shown in Fig. 9. It was realized that this patient would be in a precarious state if the stomach were left in this condition. It was known that the abdomen was matted with adhesions rendering it difficult to apply the jejunum to the proximal end of the stomach, so it was decided to perform a sleeve resection. The resulting shape of the stomach soon after operation is shown in Fig. 10*a*. At this early stage the filling defect in the stomach outline caused by the inrolling of the approximated edges of the stomach wall by Lembert sutures is seen. The stomach functions well, and the patient has since married. A recent photograph has been obtained showing the stomach shape and motility to be practically normal (Fig. 10*b*).

It is not often possible to apply stomach clamps in the manner figured in textbook illustrations of sleeve resection. The cases in which clamps can be applied rarely require sleeve resection, and in those which demand it the surgeon must use all the skill of which he is possessed to cobble together the distal third on to the ragged remains of the proximal piece, so that the posterior wall may be safe and efficient. In the patients upon whom it has been found necessary to perform sleeve resection on account of the exigencies of the condition the late progress has been quite good. Fig. 10*b* shows a stomach in which abnormality can scarcely be detected.

Usually in cases of hour-glass stomach due to ulcer in the middle third, when the case has been carefully worked out, and the *x*-ray examination—fixing the site of the ulcer and the degree of mobility of the stomach—has enabled the operation to be properly planned before the abdomen is opened, a partial gastrectomy is performed, the proximal end of the duodenum is closed, and the jejunum anastomosed with the open end of the remaining piece of stomach—Balfour's modification of the operation originally planned by Polya. Figs. 11*a* and 11*b* show the hour-glass constriction, and the condition of the viscera subsequent to operation. This operation has proved to be most satisfactory in the cases which have been severe enough to necessitate it. I believe the patients are more free from subsequent discomforts than after any other operation for gastric ulcer in this situation. The only disadvantage I have found is that in a few cases the size of the meal has to be restricted. If this is regarded the patients are happy, and as this operation has usually been performed for very disabling pain they do not mind the slight restrictions. Some are so hungry afterwards that, as one man put it, "I really cannot keep myself away from food."

I have already mentioned the simultaneous occurrence of gastric and duodenal ulcer. Figs. 12 *a*, *b*, *c*, *d*, show the appearance on *x*-ray examination of such a dual condition: 12*a* is immediately after the meal; 12*b* in two hours; 12*c* shows the condition almost unchanged in six hours; and at eight hours (12*d*) there is still a barium residue in the crater of the duodenal ulcer. At operation the gastric ulcer was found to be about one and a half inches in diameter and an inch in depth. Examination of the specimen showed that it had penetrated into the body of the pancreas. The duodenal ulcer was on the posterior inferior aspect of the first part of the duodenum; that also is a considerable ulcer. A finger could invaginate the anterior wall of the viscus into the crater of each ulcer easily. The skiagram 12*a* shows barium in the oesophagus and entering the stomach, so that the position of the cardia is defined. It also shows that there is probably sufficient of the proximal part of the stomach still unaffected to permit a partial gastrectomy. The Polya type of operation, planned to include both ulcers, appeared to be the most suitable procedure for the condition, and it was performed. The concave floor of the gastric ulcer consisted of pancreas. It was wiped clean, and a layer of great omentum tacked over it with a catgut stitch after the stomach had been dissected free from it. When this man was seen by his latest consulting physician before operation he stated that he had no pain in his abdomen, but an intense pain deep in the middle of the right side of his chest and in his right shoulder-blade, and that it had no relation to food. It had become constant and unbearable. Microscopical examination of the gastric ulcer showed that it had become malignant, thus bearing out the statement that gastric ulcers more than one inch in diameter are prone to be malignant.

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## *AN EXPERIMENTAL STUDY.*

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2. *Milks.*—The fresh cow's milk used was of good quality, was delivered in a bottle, and on standing always showed a large amount of cream. It was heated to 70° C. before being given to the animals. Of dried milks a well known brand (referred to as sample A in a previous paper[5]) was chosen as being a variety largely used by the general public. The brand of evaporated, non-sweetened milk chosen was selected because it appeared to be a popular article.

3. *Proportions.*—The evaporated milk was diluted according to the directions on the tin, and the specific gravity of this reconstructed food was approximately that of fresh cow's milk. With the dried milk 12 grams of solid were mixed with 100 c.cm. of water. This is approximately the amount of solid required to imitate 100 c.cm. of whole milk. My object was to use such amounts as would be used by the general public, following the directions given on the tin. Thus, when told to measure one

tablespoonful, etc., different people select different quantities—for example, some people give a generously heaped spoonful, while others will only fill it level. To avoid this difficulty, about twenty people were asked to measure the prescribed quantity, and these amounts were weighed. The average figure obtained in this way gave 12 grams of solid per 100 c.cm. of liquid.

*Actual Foods.*—The proportion given was 15 grams of white bread (crumb only) to 36 c.cm. of liquid, this being the amount of liquid which is conveniently soaked up by that amount of bread; also such a diet has been used with marked success during lactation. The animals were given plenty of food, the ration being increased whenever necessary.

## RESULTS.

All the animals grew well and the females produced litters at the normal time, but throughout the experiment it

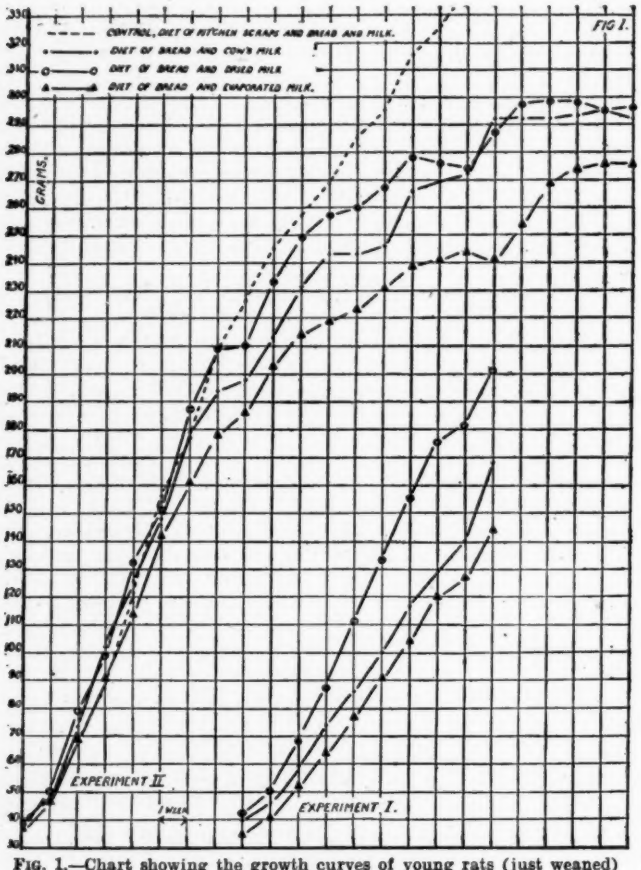
FIG I.
CONTROL, DIET OF KITCHEN SCRAPS AND BREAD AND MILK.
DIET OF BREAD AND COW'S MILK.
DIET OF BREAD AND DRIED MILK.
DIET OF BREAD AND EVAPORATED MILK.
GRAMS.
EXPERIMENT II.
EXPERIMENT I.

FIG. 1.—Chart showing the growth curves of young rats (just weaned) fed on different diets.

was obvious that the rats fed on the evaporated milk were less fit than those fed on fresh cow's milk, or the dried milk. They were less firm to the feel and did not grow quite so rapidly; neither were their coats quite so thick. There was little to choose between the rats fed on the dried milk and the fresh cow's milk; but, if anything, those fed on the dried milk fared a little better—their coats were slightly thicker and more silky. A possible explanation may be that the milk used for the dried preparation was of better quality than the fresh supply, for Luce[6] has pointed out that the diet of the cow appears to be the main factor in determining the growth-promoting value of the milk. On the other hand, the experiment lasted for twenty-two weeks, and as one sample of milk was not used throughout any variation in composition might be found equally in any one of the three samples used.

### *Growth.*

Two series of experiments were made with regard to growth. The first were only continued for nine weeks, but the results were so striking that it was thought advisable to repeat them and continue them for a longer period in order to have data about gestation and lactation as well.

The composite growth curve of the male animals is shown in Fig. 1. It is impossible to give a composite growth curve for the females, owing to the rats becoming pregnant at different times.

All the rats grew well, but more rapid growth was exhibited by those which received the dried milk diet. Finally, those fed on the dried milk and those fed on cow's milk were of equal weight, while those fed on the evaporated milk did not attain to quite such a good weight. These rats received a mixed diet of bread and fresh cow's milk, supplemented by kitchen scraps.

It is not the object of this paper to show that the final weights of animals fed on bread and milk is not up to that of the control animals which were fed on a more varied diet, but to compare dried and evaporated milks with fresh cow's milk. It is, however, a point of interest to note that for the first few weeks the growth of the milk-fed rats is equal to that of the control animals receiving a good mixed diet—that is to say, for the first few weeks the rate of growth was maximal. It is also of interest that the first

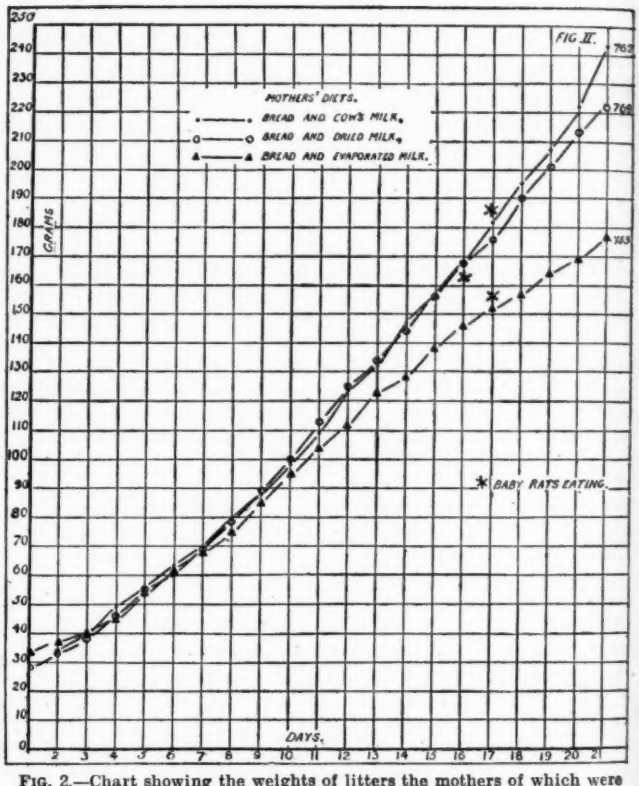


FIG. 2.—Chart showing the weights of litters the mothers of which were fed on different diets.

curve to deviate from the normal standard is that of the animals fed on bread and evaporated milk.

### *Reproduction.*

Breeding took place at the normal time, and during the experiment fifteen litters were born to animals fed on bread and fresh cow's milk, fifteen litters also to those fed on bread and dried milk, and eighteen litters to those rats which received bread and evaporated milk. The greater number of litters born amongst animals on the third diet is probably due to the fact that fewer litters survived, and therefore the does returned to the males sooner than if they had suckled their young.

Thus all three diets must be regarded as suitable for the attainment of maturity and for fertilization.

### *Gestation.*

The average weight of the young at birth was not up to that of the stock animals. The average weight of a rat on the second day of life is 5.79 grams (figure taken from records in the laboratory). As will be seen from the accompanying table, none of the young of the experimental rats came up to this weight. It is interesting that, in this respect, the dried milk gives slightly better results (5.26 grams) than the fresh cow's milk (5.049 grams). Again, the failure to rear any babies of some litters is more marked among the mother rats fed on bread and cow's,

milk and bread and evaporated milk (see table). Possibly this is due to the young being less fit, as well as of lower weight, at birth.

*Lactation.*

Lactation cannot be studied satisfactorily from this series of experiments. If the young are of low weight at birth, and the mother rat fails to rear them all, it is incorrect to assume that the diet is responsible. Obviously two factors are involved: the diet may be unsuitable for lactation, or the primary factor may lie in the poor condition of the young at birth—that is, a faulty diet during gestation. Since the young were all below average weight at birth, is is possible that the fault lay in the condition of the young, and not in the mother's milk supply. As will be seen from the table, some of the young were successfully reared, but not all.

To compare the three diets from the point of view of lactation, other experiments were made, as follows:

Stock does were selected and were given a good mixed diet during gestation. The milk diets were started as soon as possible after the birth of the litter; three mother rats were given each diet, and all were able to rear six young per litter. Examples of the growth curves of the young are given in Fig. 2.

It will be seen that the young whose mothers had the evaporated milk did not grow so rapidly as the others. Also, these babies were less fit—they were limp to the feel, and their coats were less good. However, they were all successfully weaned at the usual time.

*Statistical Comparison of the Three Milks as Food during Lactation.*

| | Dried Milk (Sample A). | Fresh Cow's Milk. | Evaporated Milk (Sample G). |
|---|---|---|---|
| Average weight of one baby rat on second day | 5.26 grams | 5.04 grams | 4.91 grams |
| Failures in rearing any one litter | 2 failures out of 15 litters | 6 failures out of 15 litters | 7 failures out of 18 litters |
| Number of times all six young reared | 6 | 3 | 4 |
| Highest weight of one baby at 21 days | 47 grams | 42.75 grams | 38.5 grams |
| Lowest weight of one baby at 21 days | 30.33 grams | 28.8 grams | 26.0 grams |

COMMENTS AND CONCLUSIONS.

From the experiments described in this paper it is obvious that dried and evaporated milks possess quite different dietetic values, and that the dried milk approximates more closely to fresh cow's milk than does the evaporated variety. Although only one sample of each kind of milk was used in this work, experiments previously reported prove that dried milks are superior to the evaporated ones as regards vitamin B content. To sum up—

1. The dried milk (Sample A)[5] compared with fresh cow's milk:

(*a*) The initial rate of growth of the young rats was more rapid, but the final weight attained was practically the same.

(*b*) The weight of the young on the second day was slightly better—that is, dried milk appears to be a better food for gestation.

(*c*) The suckling rats had thicker and silkier coats if the mothers were fed on the milk diet throughout their lives, but when the milk diet was only fed during lactation (that is, a good mixed diet given during gestation) there was no apparent difference in the sucklings.

2. The evaporated milk (Sample G)[5] as compared with cow's milk:

(*a*) The rate of growth of the young rats was less rapid and the final weight attained was less.

(*b*) The weight of the young at birth was less satisfactory.

(*c*) The weight of the young at weaning was lower. This applied equally to the baby rats of mothers fed on a good mixed diet during the gestation period, or on the milk diet throughout their lives.

Thus, the dried milk (Sample A) appeared to be quite equal in dietetic value to fresh cow's milk; if there was any advantage, it was in favour of the dried variety.

The evaporated milk (Sample G), however, compared less favourably with the fresh cow's milk.

It must be remembered, however, that a restricted diet, such as bread and any form of milk, is not as good as a mixed and more varied diet.

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## THE ETIOLOGY OF PERNICIOUS ANAEMIA.

BY

A. CECIL ALPORT, M.D.EDIN., M.R.C.P.LOND.,

FIRST ASSISTANT TO THE MEDICAL UNIT, ST. MARY'S HOSPITAL, PADDINGTON.

SINCE Addison in 1849, in a paper read before the London Medical Society, described idiopathic anaemia, later called pernicious anaemia, a large number of theories have been advanced relative to its etiology. Hunter's hypothesis is that it results from oral sepsis with subsequent streptococcic infection of the stomach, and there can be no doubt that pyorrhoea is at least a contributory cause. It may account for the toxin to which the combined lateral and posterior degeneration of the cord, occurring in about half the cases, is due. The latter is a true degeneration of nerve fibres affecting both the axis cylinders and the myelin sheaths, and not a sclerosis such as occurs in disseminated sclerosis. The fact that this degenerative change in the posterior and lateral columns occurs in other wasting diseases and may antedate the anaemia or be unaccompanied by the anaemia, lends weight to James Collier's argument that the toxin affecting the cord is not necessarily the cause of the anaemia, but that the anaemia and the cord changes may be the results of a pathological process responsible for more than one toxin. Other investigators are of opinion that pernicious anaemia is due to intestinal toxaemia. Herter blames the *Bacillus welchii*, while Adami suspects the *Bacillus coli*.

Hurst[1] says that it is now generally agreed that Addison's anaemia is caused by a haemolytic toxin produced by some infection in the alimentary canal, and states his belief "that this infection cannot take place unless free hydrochloric acid is completely absent from the gastric contents." He claims that the achlorhydria is neither caused by the same toxin which produces the anaemia nor is it secondary to the anaemia, but that it is an essential predisposing factor. He quotes Ryle and Bennett[2] to show that 4 per cent. of healthy young men have achlorhydria. It will be interesting to see whether these men in due time develop pernicious anaemia. Hurst sums up his views as follows: "The achlorhydria allows the bacteria which produce the haemolytic toxin, and which probably have their primary focus in the mouth, to pass through the intestines without being destroyed by the HCl which ought to be present."

I have endeavoured to approach the subject of pernicious anaemia from a new standpoint. I agree that an unknown toxin is probably the cause, but can find no proof of this. Therefore I have tried to postulate a theory with a non-toxic basis. It is possible that in this disease two independent processes are at work—an abnormal blood regeneration by the bone marrow and an increased blood destruction. Which of these processes is the primary one?

The general opinion seems to be that the main factor is the toxic effect upon the bone marrow, resulting in the production of immature cells, which are unable to resist the forces of blood destruction and become disintegrated in the blood stream or destroyed by the phagocytic cells in the liver, kidneys, and other organs. The hypothesis I prefer is that the primary factor is the phagocytic action of the liver and kidneys, and that the bone marrow change is secondary, the latter being due to an increased and urgent

demand for red cells to replace those destroyed. As a corollary to this I ventured to suggest to myself that the cause of the increased destruction was not an unknown toxin, but an unknown substance normally present in blood, the diminution or absence of which renders the blood increasingly liable to phagocytosis by the epithelial cells of the liver, etc., and I assumed this substance to be a constituent of bone marrow or a complex circulating in the blood.

In an endeavour to prove this theory, I attempted to extract an active substance by treating 2 kilograms of ox bone marrow with 80 per cent. alcohol, and later with 95 per cent. alcohol, and obtained no result. This was probably to be expected. I now applied this alcohol-fractional precipitation method, used by Banting in Toronto for the preparation of insulin, with slight modifications, to ox blood. I am indebted to Dr. Calvert of the Medical Unit for his assistance in the extraction.

### *Preparation of Extract.*

To 8 litres of fresh ox blood 5 litres of 95 per cent. alcohol, previously cooled to 3° C., were added with constant stirring. The mixture was allowed to stand for two hours and filtered through thick Chardin paper. To the filtrate was added one and a half times its volume of 95 per cent. alcohol. The liquid, placed in a cool room overnight, was refiltered next day, giving a perfectly clear yellowish solution. The alcohol was distilled off *in vacuo* at a temperature of 45° C. in a water-bath. The following day the turbid liquid residue was redistilled *in vacuo* until the volume of the aqueous solution, the fat having separated out, was reduced to 250 c.cm. It was then filtered free from fat in a Buchner funnel and the residue shaken up in a separating funnel to dissolve any fat that might be left. After this the aqueous solution was made up to 80 per cent. with absolute alcohol and allowed to stand overnight in a cold room.

On the fourth day a thick yellowish solution had formed; it was decanted off and made up to 93 per cent. with absolute alcohol. This was allowed to stand in ice overnight. By the following day a precipitate had separated out. The 93 per cent. alcohol was siphoned off, about 50 c.cm. being left covering the precipitate. The latter was then centrifuged down, washed once with alcohol and once with ether, and then transferred to a vacuum desiccator over sulphuric acid.

The 8 litres of ox blood yielded 1.45 grams of a blood extract which I called "sanguinin." The substance is light brown in colour and very readily soluble in water. The solution, which is yellowish, I made up in the following dilution: 1 c.cm. of the solution = 10 mg. of sanguinin.

### *Experiments.*

Intravenous injections were given into the marginal veins of the ears of two rabbits.

*Experiment 1.*—In the first rabbit 2 c.cm. (20 mg.) of sanguinin was injected. Fifty minutes after injection the blood sugar equalled 0.128 per cent., and ninety minutes after 0.140 per cent., showing that there was no appreciable amount of insulin present in the injection of blood extract given. Blood counts taken on the following dates showed:

| 1923. | Red Cells. | White Cells. | Haemo-globin. | Colour Index. |
|---|---|---|---|---|
| Dec. 4, just after injection ... | 5,496,000 | 5,200 | 70% | 0.64 |
| Dec. 8, 4 days ,, ,, ... | 6,440,000 | 7,400 | 65% | 0.5 |
| Dec. 10, 6 days ,, ,, ... | 5,512,000 | 5,100 | 80% | 0.78 |

In ninety hours the red corpuscles had increased by nearly a million per cubic millimetre, the whites by 2,200, and there was a fall of 5 per cent. in haemoglobin. The latter may have been due to there being too great a demand for haemoglobin to cope with the increase in the number of red cells. The general deficiency of haemoglobin was due to the animal being kept in confinement.

*Experiment 2.*—Into a second rabbit was injected 5 c.cm. (50 mg.) of sanguinin. Blood counts taken on the following dates showed:

| 1923. | Red Cells. | Haemo-globin. | Colour Index. |
|---|---|---|---|
| Dec. 17, just before injection ... | 4,016,000 | 85% | 1 |
| Dec. 21, 4 days after injection... | 5,664,000 | 75% | 0.66 |
| Dec. 24, 7 days ,, ,, ... | 6,280,000 | 90% | 0.72 |
| Dec. 31, 14 days ,, ,, ... | 5,504,000 | 82% | 0.82 |

Here again we find a fall in haemoglobin and an increase in red blood cells followed by a fall. It would appear that the sanguinin either temporarily stimulates blood formation or temporarily inhibits blood destruction.

A similar effect was observed on giving a series of intravenous injections to a patient with pernicious anaemia in a remission stage.

The patient was admitted to hospital on October 21st, 1922, with the following signs and symptoms: Lemon-yellow tinge of skin, glossitis, complete achlorhydria on three occasions; temperature rising to 100° F. at night; numbness and tingling in arms and legs, oedema of legs, and increasing weakness. All her teeth had been removed eight years previously, and her stools contained coliform bacilli only. The blood picture on admission was as follows: There was a great variety in the size and shape of the red cells, numerous megaloblasts, some showing mitosis. The red cells numbered 802,000 per c.mm., white cells 1,500, haemoglobin 20 per cent., colour index 1.2. Differential count: Polymorphs 32.5 per cent., small lymphocytes 51 per cent., large lymphocytes 7 per cent., eosinophils 5 per cent., myelocytes 3 per cent., hyalines 1 per cent.

The patient left hospital on December 15th for Christmas. She had greatly improved; the red cells numbered 2,436,000, white cells 1,400, haemoglobin 33 per cent., colour index 0.69. She attended afterwards as an out-patient, and periodical blood examinations were made without showing any appreciable difference in the blood picture.

As this seemed a suitable case for experimental purposes, owing to the blood being in a stationary condition, I gave her a series of intravenous injections of sanguinin at intervals of four days: 1 c.cm. (10 mg.) of sanguinin was given on September 30th and on October 3rd, 7th, 11th, and 15th. The blood counts, taken four days before, during, and subsequent to the injections, were as follows:

| 1924. | Red Cells. | White Cells. | Haemo-globin. | Colour Index. |
|---|---|---|---|---|
| September 26 ... ... ... | 2,640,000 | 1,100 | 36% | 0.68 |
| October 7 ... ... ... ... | 3,196,000 | 1,200 | 39% | 0.61 |
| October 11 ... ... ... ... | 2,956,000 | 1,700 | 39% | 0.66 |
| October 15 ... ... ... ... | 3,148,000 | 1,400 | 39% | 0.61 |
| October 22 ... ... ... ... | 3,176,000 | — | 39% | 0.61 |
| October 29 ... ... ... ... | 3,560,000 | — | 42% | 0.6 |
| November 5 ... ... ... | 3,640,000 | 2,600 | 40% | 0.55 |

Differential count: Polymorphs 29 per cent., large lymphocytes 10 per cent., small lymphocytes 59 per cent., eosinophils 4 per cent., fragile cells 2 per cent., and neutrophil myelocytes 1 per cent.

After the first injections she complained of sweating and of feeling tired, sleepy, and heavy in head, arms, and legs. After the later ones she said that they gave her fresh life and vitality and she missed them when they were omitted—probably a mental effect.

On December 1st, 1924, the count was as follows: Red cells 2,920,000, white cells 1,600, haemoglobin 40 per cent., colour index 0.69. Examination of the above figures shows that there was a rise in the red blood corpuscles of 1,000,000 per c.mm. in six weeks, followed by a fall in the succeeding three weeks. The white count of this patient has always shown a marked leucopenia, usually about 1,500 per c.mm. with a relative lymphocytosis. The colour index is characteristically high in the relapse and low in the remission stages.

Experiments with sanguinin (1 c.cm.) on blood pressure showed an immediate fall of about 20 mm. of mercury, but intravenous injections of distilled water (1 c.cm.) gave the same results, so the observation was of no value. I expected an increase in the blood pressure, on the assumption that there might be a percentage of adrenaline present in the blood extract. It is impossible to say how much of the undoubted improvement which has occurred in this patient since the injections were given is due to the sanguinin.

### *Conclusion.*

The fact of importance which arises out of the above experiment is that an extract can be obtained from blood by means of the alcohol-fractional precipitation method. The substance is freely soluble in water, non-toxic, and has apparently some effect in increasing blood formation. The extraction process is a long and expensive one and the amount of sanguinin obtained very small. The failure to extract sufficient insulin to affect the blood sugar curve in the amount given to the rabbit is interesting, as is also the negative result obtained on examining the blood pressure.

It is not impossible that, by using other methods of extracting blood, further substances, probably of greater import than sanguinin, may materialize.

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[2] Ibid., Vol. 71, 186, 1921.

# Memoranda:

## MEDICAL, SURGICAL, OBSTETRICAL.

### GALL STONES IN ADOLESCENTS.

THE accounts of cases recently published in the BRITISH MEDICAL JOURNAL describing the occurrence of gall stones in adolescents have elicited the fact that, at all events until fifteen years ago, no operation for this trouble had been performed on anyone under 21 years of age, and therefore the publication of another instance would appear to be justified.

S. E., a well built French girl, aged 15 years, was seized with abdominal pain, referred chiefly, but not solely, to the epigastrium, and of varying but gradually increasing severity. On the second day, at my request, Mr. C. P. Childe saw her with me, and forty-eight hours later the condition sufficiently resembled an "acute abdomen" to call for immediate operation. An appendix in a high position was the most natural conclusion, but a tentative diagnosis of gall-bladder trouble was made, with, however, less confidence than would have been the case had the patient been older.

Mr. Childe operated through an incision in the right semilunar line, which revealed acute cholecystitis without peritonitis. On opening the gall bladder, thickened bile with 150 small faceted stones and two larger ones, measuring 1/4 and 1/2 inch respectively, were found. On account of the infected condition of the gall bladder, cholecystectomy was perfomed, and recovery was uneventful. The only other point worthy of note is that the patient had been an inordinate eater of sweets from babyhood.

Southsea. M. ASTON KEY, O.B.E., M.D.

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THE note by Mr. C. M. Kennedy (May 9th, p. 882), relating a case of gall stones in a girl of 13, prompts me to send a few details of a somewhat similar case.

M. R., a girl aged 14½ years, was sent to me by Dr. E. Gimson, D.S.O., of Witham, with a diagnosis, which he had made, of gall stones. The symptoms dated from two years previously, and there had been five attacks of severe colic in the preceding nine months and minor attacks of pain dating back to 1921. During one attack she was definitely jaundiced. When I saw her on March 24th, 1923, there was distinct tenderness on deep pressure in the right hypochondrium. I performed cholecystectomy for her a few days after, the gall bladder containing a large number of small stones.

Although this is the earliest age at which I have performed this operation for gall stones, I have had one or two others under the age of 20.

London, W.1. CECIL A. JOLL.

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CASES like that recorded below are of interest apart from their rarity. The patient was a Tamil boy, aged 12, with obstructive jaundice caused by gall stones and *Ascaris lumbricoides*. The case demonstrates the importance of this parasite as a cause of surgical conditions.

The patient was admitted to hospital on December 12th, 1923, under the care of Dr. P. H. Hennessy. He was in poor physical condition; both thighs were flexed on the abdomen; there was general abdominal tenderness, but no visible tumour. The temperature was normal; pulse 80. The tongue was coated and the bowels constipated.

His past history was as follows: At the age of 7 he suffered from sudden abdominal pain followed by vomiting. The pain increased in severity and lasted for about a week. He was at this time constipated and retention of food was difficult. He was taken to a dispensary and given "worm powders" and a dose of castor oil, and subsequently passed several ascaris worms. The pain subsided temporarily, only to return at monthly intervals. No swelling or distension of the abdomen had been noticed. During the three months previous to admission the attacks of pain had increased in severity; they were not constant in character, but were accompanied by fever and general weakness.

Examination of the blood for malarial parasites was negative. A blood count showed: Polymorphs 69 per cent., small mononuclears 20 per cent., large mononuclears 5 per cent., eosinophils 6 per cent. No ova were found in the faeces, and the urine was normal.

On the day following admission the temperature rose to 100° F. and the patient had a rigor; severe pain was present in the umbilical region. A well marked globular swelling could now be felt protruding from beneath the under surface of the liver. The urine contained bile, and the patient was slightly jaundiced. Dr. Hennessy diagnosed obstructive jaundice caused by gall stones in the common duct, complicated by ascaris worm in the biliary tract.

The patient was transferred to the surgical ward under my care on December 20th. Examination confirmed the diagnosis, and operation was decided upon.

*Operation.*—Under C.E., ether, and oxygen (Shipway) anaesthesia, the abdomen was opened by a right paramedian incison and the right rectus drawn outwards. The gall bladder was found greatly distended, the liver enlarged and of a bright red colour, with the lower border much thickened. There were no adhesions either in conjunction with the gall bladder or liver. The upper surface of the liver showed some scarring. The common bile duct was enormously dilated. Palpation of the gall bladder failed to detect any stones, but palpation of the common duct disclosed a number. The abdomen was thoroughly packed off. The gall bladder was opened, emptied, and examined. The mucous membrane appeared to be healthy and the wall was not appreciably thickened; no stones were found. The bile evacuated appeared normal. A drainage tube was fixed into the gall bladder and brought well outside the abdomen. The common duct was then opened over a stone, sufficiently to admit the index finger. The left index finger was then easily passed upwards to the hilum of the liver and several stones were located. These were manipulated downwards and extracted. The finger was then passed downwards towards the ampulla of Vater and a large stone found; this was also manœuvred upwards to the incision and extracted. A curious cylindrical body was at once noticed in the centre of this stone, which on subsequent examination proved to be a portion of an ascaris worm. As the common duct now appeared clear of stones, mud, etc., a rubber drainage tube was passed upwards and the incision in the duct sutured over it. Both tubes were now brought out through the posterior sheath of the rectus—through a specially made incision. The rectus was replaced and a small split made in it; through this the tubes emerged. The gauze packs had already been removed and the peritoneal toilet attended to. The abdomen was then closed.

The boy stood the operation admirably. The drains were removed on the fifth day. The fistula was completely closed on January 5th, 1924, and the boy was convalescent.

Examination of the urine showed bile to be present each day from December 23rd to 28th, 1923, but absent on December 30th. There were no ascaris ova in the stools. The specimens were forwarded to Dr. Fletcher, Government pathologist, Kuala Lumpur, who reported as follows:

"I could find no eggs, but the fragment of worm was surrounded by a definite article, and there is no doubt that you are right and that it is a piece of round-worm."

In a subsequent report Dr. Fletcher said:

"I should think it probable that the ascaris was the cause of the gall stones, by acting as a contaminated irritating foreign body. The gall stones probably formed in the gall bladder."

C. BURGOYNE PASLEY, F.R.C.S.I.,
Chief Surgeon, Perak, F.M.S.

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### BILATERAL TWISTED OVARIAN CYSTS.

THIS case seems to be worthy of recording on account of its rarity.

A married woman, aged 45, was in good health until the beginning of March, 1925, when she noticed that she was getting stouter. On March 14th she had an attack of abdominal pain lasting a few hours; there was no vomiting, and the following morning she was well again. She consulted her doctor, and at a subsequent consultation the following facts were noted.

The patient was well nourished and looked well. She had slight exophthalmos with some enlargement of the thyroid and tachycardia (90). Menstruation had been quite regular up to Christmas, but she had seen four periods since then. The abdomen was distended, with bulging of the flanks and a well marked fluid thrill. A solid mass could be felt for 2 to 3 inches above the pelvic brim rather to the right of the middle line. No pain or tenderness was elicited. By vaginal examination it was found that the pouch of Douglas bulged into the posterior fornix and that there were one or two small fibroids in the cervix. Bimanually a rounded swelling could be palpated, which was thought to be separate from the uterus. The uterus itself was enlarged.

A diagnosis of fibroid uterus with an ovarian cyst or solid ovarian tumour and a large ascitic accumulation was made.

The patient came to the nursing home on the following day, and during the forty-eight hours between the consultation and the operation the amount of ascites had markedly increased and the abdomen was tense. The pulse rate had risen to 110, and a systolic bruit was heard at the apex. Just prior to the operation the radial pulse could not be counted, but the patient seemed remarkably comfortable.

On opening the abdomen 14 pints of clear ascitic fluid was slowly evacuated and the patient's general condition improved. Two large ovarian cysts, each about the size of a grape fruit, were found. The right one was in the right iliac fossa and the left was in the pelvis, with many recent adhesions around it. They were both twisted, purplish in colour, and very tense, and many of the vessels running over them were thrombosed. Both were removed in the usual way. The uterus was enlarged to about two months' pregnancy and fibroid, but the condition of the patient did not warrant removal.

The interior of the cysts was lined by a warty growth which Dr. Walker Hall found to be a proliferating papillary ovarian cystoma, with much degeneration, accompanied by haemorrhage due to strangulation and locally malignant. The patient made an uneventful recovery; the bruit disappeared, and she left the nursing home three weeks after the operation.

Hereford. J. AUGUSTIN PRICHARD.

# Reports of Societies.

## ERYTHROEDEMA.

AT a meeting of the Edinburgh Medico-Chirurgical Society on May 6th, with Sir DAVID WALLACE, the President, in the chair, Dr. J. S. FOWLER read a paper on erythroedema and described four cases which had come under his notice.

Dr. Fowler referred to the rarity of the condition in this country, but pointed out that, owing to the fact that the symptoms of the disease did not always form a typical syndrome, it was probable that the condition would be found to occur more frequently if a careful watch was kept for it. He referred to the frequent occurrence of the condition in Australia: Swift of Adelaide was the first to draw attention to the condition, and he named it "erythroedema." Jeffreys Wood of Melbourne, and Bilderback and Weston in America, described further cases, the latter terming the condition "acrodynia." A few cases had been recorded in England by Thursfield, Parkes Weber, and Paterson, and by Feer of Zürich—the only Continental reference. Dr. Fowler then described the four cases seen by him since 1923. In none of them was there any history with regard to diet or antecedents which might throw light on the etiology; the home conditions in all were above the average. The chief clinical features as shown by these four cases were as follows:—*Age:* Dr. Fowler's cases were two boys aged 2 years and 13 months respectively, and two girls aged 2 years 1 month and 13 months. The disease, however, might occur between 4 months and 4 years, and appeared to affect both sexes equally. *Course of Prognosis:* Three of Dr. Fowler's patients died, but this was exceptional; most recovered after a protracted illness lasting up to a year. In Jeffreys Wood's 91 cases only 5 died, mostly from bronchopneumonia. *Symptoms:* The striking appearance of the hands and feet was pathognomonic of the disease, and the red nose and cheeks were often seen. Profuse sweating accompanied by rashes and intolerable itching was invariable. The thoroughly wretched condition of the patient was most striking, and was associated to some extent with the characteristic insomnia. Dr. Fowler thought that this insomnia was not entirely due to the itching but was a direct symptom of the disease, resembling the insomnia of encephalitis in some cases. Loss of teeth was common, and the chief nervous symptom was muscular atony. The frequent pulse without pyrexia and the high blood pressure were probably constant features. Dr. Fowler found no special changes in the blood or cerebro-spinal fluid, and the Wassermann test was negative in all cases. Nothing was definitely known as to the etiology of erythroedema. On account of a distant resemblance to pellagra, a diet deficiency had been suggested, but in the cases described the feeding and home surroundings had been usually quite satisfactory. There seemed no doubt that for some reason or another erythroedema had become more common since the influenza epidemics of 1918; Feer had suggested some upset of the vegetative nervous system. The treatment was not satisfactory. Attention to the diet, and painting the gums with 1 per cent. chromic acid to prevent secondary infection, were the main points. Feer stated that benefit resulted in one case from large doses of atropine, and in another from calcium lactate.

*Case 1.*—A female, aged 2 years and 1 month, had been quite healthy until an attack of vomiting with feverishness of fourteen days' duration, four months before admission. Since then she had been very miserable, cross, and sleepless, refusing food, and suffering from an itchy rash over the body. During the last few weeks her fingers and toes had become thickened, red, and clammy. She had wasted, could no longer walk, and when sitting in bed always fell forward on her face. On admission the child was miserable, whined constantly, and seemed in pain if touched. She was fairly well nourished, her cheeks and nose were bright red, and her muscles very soft and flabby. She lay either with her face buried in the pillow or with her head resting on her knees. A punctate erythema resembling a sweat rash was scattered over the body, and she sweated profusely. The hands and feet were swollen, livid red, with thickened fingers and toes covered by sodden desquamating skin which felt cold but did not pit on pressure. The discoloration had an ill defined margin and extended to just above the wrists. The hair was short, ragged, and scanty. The heart and lungs were healthy, and there were no signs of rickets. The leucocyte count was 12,000. There was great muscular hypotonia, with no true motor paralysis; the knee-jerks were much diminished, and sensibility to pin-pricks impaired. While in the ward she showed marked sleeplessness, very poor appetite, and slowly wasted. Cutaneous irritation was marked; she rubbed at her skin and pulled out tufts of her hair. The temperature was not raised, but the pulse varied from 120 to 150. The blood pressure was high—100 to 120 mm. mercury. With no apparent previous changes in the gums three incisor teeth loosened and fell out; this was followed by a very bad stomatitis which showed no tendency to heal. During her eighth week in hospital she developed bronchitis and a streptococcal infection of a finger-nail, and died of septicaemia.

*Case 2.*—A male, aged 2 years, was admitted on account of stomatitis and loss of teeth. Seven weeks previously he had become moody, fretful, and irritable. Three weeks later the hands became irritable, red, and swollen, while a speckled rash appeared over the body. He then began to pull tufts of hair out, and play with his teeth, which fell out. There was no insomnia. He was very ill on admission and died a few hours later from bronchopneumonia. The hands and feet had the same appearance as in Case 1; the body was covered with sudamina, the muscles were very soft and lax, and the gums were sloughing deeply.

*Case 3.*—In a female, aged 13 months, the first symptoms were constipation followed by diarrhoea. She became flabby and very cross, and sat with her face resting on her knees. She slept little and had a very poor appetite, but was always thirsty. The hands and feet had become red and swollen. On admission she was fretful, the nose and cheeks red and mottled, the hands and feet swollen, dark red, and moist, and the muscles very lax. The pulse was 160, the blood pressure 115. Several teeth fell out while she was in hospital, and the gums became ulcerated, exposing the permanent teeth and leading to the loss of one of these also. The symptoms were the same as in Case 1, only less severe. After five weeks in hospital she was removed by her parents, who were leaving the town, and had since been lost sight of.

*Case 4.*—In a male, aged 13 months, illness began at the ninth month with bright red rashes on the body. He became very limp, but was not fretful. He sweated a great deal, and the hands were so itchy that they had to be bandaged to prevent scratching. His symptoms had never alarmed the mother, but two days before his death he had erythematous rash, was very flabby, and his hands and feet were red and swollen. Next day his temperature was 100°, and on the morning of Dr. Fowler's visit he had suddenly collapsed. He was moribund when seen, the temperature was 105°, and the pulse was uncountable. He was sweating profusely; one incisor tooth was loose. He died half an hour later; no explanation of the sudden collapse and fever was found.

Dr. JOHN THOMSON said that his own experience of erythroedema—apart from the cases which Dr. Fowler had shown him—consisted of two good-class children aged 2 years 4 months and 17 months respectively. Their symptoms were those which Dr. Fowler had described, but they were milder cases and showed no loosening of the teeth. They were both treated with cod-liver oil, vegetables in the diet, and autogenous vaccines from the skin lesions. Both recovered and had remained well.

Dr. CRANSTON LOW suggested the possibility that the teeth condition might be the primary one, and the source of absorption. From the description of these cases the skin condition seemed to him to resemble what might be called glorified chilblains: in his opinion chilblains were due to the absorption of some toxic substance—most likely from the bowel.

Dr. FOWLER agreed with Dr. Cranston Low about the resemblance of erythroedema to chilblains, and thought there might possibly be some relation between them. He did not think that the teeth could be the primary cause, as disease there was usually a late symptom. An early *x*-ray examination might, of course, show a primary focus, and in any future case this would be looked for.

### *Bronchial Fibrosis in Children.*

Dr. CHARLES MCNEIL then read a paper on fibrosis of the bronchi and lungs in childhood following bronchopneumonia. He referred to the fibrotic conditions of the lung consequent upon primary interstitial pneumonia produced by tuberculosis, syphilis, the duct diseases, and foreign bodies in the bronchus. He drew attention to the fact that though widespread alveolar pneumonia was a common condition, interstitial inflammation followed by fibrosis rarely resulted from it. Inflammation of the bronchi or pleura was more commonly followed by permanent peribronchial and subpleural fibrosis. With regard to the latter condition, one striking feature was the good general health usually found with widespread physical change in the affected lung. His paper was based on six cases in which the fibrotic changes were definite and demonstrable, and on twelve others in which the fibrosis was indefinite, but where the other clinical features justified their inclusion in the same

group. Referring to the history of the disease, he paid tribute to Laënnec's work in describing the fibrotic condition of the lung associated with bronchiectasis. In Laënnec's four cases the history was life-long, but the condition was compatible with long life and fair health. He apparently considered the bronchial dilatation as the primary factor. In 1838 Corrigan of Dublin described three autopsies, and said that the primary change was the increase of fibrous tissue, bronchial dilatation resulting from the traction of this contracting fibrous tissue. In addition he described the displacement of the heart to the affected side. Dr. McNeil referred to the monograph by Clark, Hadley, and Chaplin, differentiating between simple and tuberculous fibrosis by the good general condition of the patients, the absence of tubercle bacilli from the sputum, and the massive fibroid change in one lung. In most cases the originating illness had not been observed, but he believed that it was always a bronchopneumonia. In three of his cases the bronchopneumonia was primary and in three associated with measles. The immediate sequelae of such cases were the persistent hacking cough and failure to recover former vigour, but alarming thinness was uncommon. In the early months relapses with fever and exacerbation of cough occurred. The cough usually began on waking and lasted for half to one hour. Sometimes it occurred during the night and vomiting was frequent. Cough was apt to follow slight exertion or crying. The sputum in Dr. McNeil's cases was scanty and viscid, occasionally streaked with blood, and tubercle bacilli were never found. The breathing readily became hurried on exertion. In his six complete cases the fibrosis was always unilateral—left-sided in five, and right-sided in one. Flattening of the affected side, dullness, and faint or loud bronchial breathing with accompaniments were found in all cases. *X*-ray examination confirmed the physical findings and demonstrated the displacement of the heart and trachea. Dr. McNeil showed lantern slides from photographs of his patients and of *x* rays of their lungs. With regard to bronchiectasis, he suggested that on clinical grounds paroxysmal cough and cavernous breathing were not enough. A copious expectoration and probably also the presence of clubbing of the fingers and cyanosis should be present before the term "bronchiectasis" was justified. The general health in those six cases was found to vary. Under 5 years old, nutrition suffered little, after 5 years periods of good and bad nutrition, according to the severity or otherwise of the symptoms, occurred. In later childhood average energy and activity was shown. Clubbing of the fingers, cyanosis, and dyspnoea did not show in these six cases. Recurrent attacks of pneumonia occurred, but Dr. McNeil's experience had been that they were less severe and prolonged than usually occurred in an undamaged lung. These patients also resisted well ordinary infectious diseases. With regard to the possibility of infection by tuberculosis, Dr. McNeil thought that because of the amount of fibrous tissue these patients resisted tuberculosis more readily. If the general condition was good, and especially if in addition the tuberculin reaction was negative, the presumption was against active lung tuberculosis. Dr. McNeil then described his incomplete cases as being identical with the classical type with nocturnal cough, except for the absence of definite consolidation and contraction of the lung. The *x*-ray picture was blurred and streaked and the changes were bilateral. The signs of bronchial or pulmonary catarrh, however, were confined to one area of lung and remained so. He showed slides of microscopic sections of lungs of children who died at a very early stage in acute bronchopneumonia, in which congestion of the peribronchial tissue and cellular proliferation and oedema of the interalveolar tissue were seen. The prognosis in these cases, as had been indicated, was usually good, but treatment to reduce the fibrosis was not promising. Dr. McNeil had used iodides and thyroid extract without definite results. For the catarrhal condition and cough, complete rest in bed, warmth, fresh air, and sunshine were the sovereign remedies. Various expectorants and antiseptics might be used with benefit, but postural coughing and autogenous vaccines in Dr. McNeil's six cases—in which probably no real bronchiectasis was present—were of no value.

Dr. FOWLER remarked on the good general health of these patients. He thought that in the majority of the cases the affection was primarily in the pleura. Dr. RITCHIE said that the massive involvement of one lung and the healthy condition of the other, along with the radiograms, were the most useful signs in differentiating between this condition and pulmonary tuberculosis. Dr. GUTHRIE referred to the condition being produced by a foreign body. In none of Dr. McNeil's cases which Dr. Guthrie examined could any sign of a foreign body in the bronchus be found. Dr. MATHEWSON described two cases in older children in whom an early systolic aortic murmur was heard. He suggested this might be due to mechanical traction on the root vessels of the neck. Dr. MCNEIL, in reply, agreed that some cases might be pleural in origin. He had not found any aortic murmur in his cases.

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## GASTRIC AND DUODENAL SURGERY.

A MEETING of the Section of Surgery of the Royal Society of Medicine, with the President, Mr. H. J. PATERSON, in the chair, took place on June 3rd, when Dr. CHARLES H. MAYO (Rochester, Minn.) gave an address on gastric and duodenal surgery.

Dr. Mayo said that operations to relieve pyloric obstruction were devised and practised early in the history of modern surgery. The first of these was the operation of pylorectomy by Billroth's first method. In 1882 Hartmann and other Continental surgeons were practising this operation, which gave great relief in successful cases, but was attended by a very high mortality from leakage at the dangerous triangle where the duodenum was united to the suture line in the stomach. To Nicolodena belonged the credit for devising the first short-circuiting operation or gastro-enterostomy, which avoided the difficulty of dealing with this triangle. This was followed by the introduction of Billroth's second method of pylorectomy, in which the cut stomach was completely sutured and the open end of the duodenum anastomosed to a fresh opening in the stomach. Owing to the fact that the duodenum was an unsatisfactory material for suture, the operation of Billroth II was superseded by operations designed to dilate the pylorus, such as those of Loreta and Rammstedt; the latter was still extensively practised to this day for the congenital form of pyloric stenosis in infants. In 1892 Finney began to perform pyloroplasty, an operation which he continued to perform with great success until three years ago, when it was modified. About the same time came the mechanical aids to anastomosis—Murphy's button, Mayo-Robson's bone bobbin, Senn's decalcified bone plates, etc.; all these had now been abandoned in favour of plain suture. The next and very great advance in gastric surgery was the advent of the Polya operation, which was extensively practised at the present time throughout the surgical world, either in the original form, in which the anastomosis was a posterior one, or now ofttimes in Balfour's* modification, in which the loop of jejunum was brought in front of the splenic flexure of the colon and the anastomosis was consequently an "anterior" one, although the same opening in the stomach was employed for the stoma. It was remarkable that the small remainder of the stomach became dilated after this operation, so that in time the organ resumed a size approximating to the normal. Balfour's modification, now regarded as the more satisfactory operation of partial gastrectomy, whether for ulcer or for cancer, was originally designed to avoid the necessity for the opening in the transverse mesocolon near the mid-colic artery; for it was thought that the liberal blood anastomosis in that region was responsible for the very rapid dissemination of cancer which sometimes followed the original procedure. The success of the operation of gastro-enterostomy had led to its abuse by performing the operation when no ulcer was demonstrable, although symptoms simulating ulcer might have been present. The reflex causes of gastric symptoms were now more generally recognized, and failures from this cause less frequent. Other causes of failure which the speaker had had to deal with arose from an improper site of the anastomosis, a long loop, and ulcer at the anastomosis. In

* Generally known as the Mayo-Polya operation.

three cases, on reopening the abdomen after a primary operation by another surgeon, he had discovered the anastomosis in the ileum at 9, 10, and 18 inches respectively from the ileo-caecal valve. A long loop was now recognized as being liable to give trouble from angulation or kinking, but the direction of the stoma was a matter the importance of which was still insufficiently appreciated. It was only rarely that the first piece of the jejunum ran directly down from the duodeno-jejunal junction; more often the first turn or loop was in the region of the spleen. There was sometimes trouble with the third loop of the jejunum in the region of the gall bladder. Gastro-jejunal ulcer had become less common since the adoption of the catgut suture for both layers; the majority of anastomotic ulcers were associated with the presence of an unabsorbable suture. At the Mayo Clinic it was remarked that the cases that progressed well from the first generally continued to do so; further trouble was to be expected chiefly in the cases which did not make rapid improvement immediately after the operation.

Regarding the choice of operation to suit the individual case of ulcer of the stomach or duodenum, Dr. Mayo held very strongly that the operation of partial gastrectomy should be reserved for the large ulcer of the body of the stomach, the type that was apt to become cancerous. He had seen extensive resections of the stomach with a portion of the duodenum performed for small ulcers of the pylorus or even of the duodenum, neither variety being of the type that became cancerous; this he regarded as quite unnecessary and unjustifiable. As regards the results of the surgery of gastric and duodenal ulcer, records of 1,000 consecutive cases at the Mayo Clinic showed that 90 per cent. were successful, but 10 per cent. were failures either from haemorrhage, obstruction, or gastro-jejunal ulceration; the incidence of the last had been reduced from 4 per cent. to 2 per cent. by the use of catgut exclusively. The common etiology of ulcer of the stomach or duodenum was expressed by its name, "peptic ulcer," but ulcers did occur in cases of complete achlorhydria which could not be so explained, since no hydrochloric acid was present to activate the pepsin. Such ulcers were associated, he thought, with the innervation of the stomach; the achlorhydria was a part of a general alkalosis throughout the body, accompanied by various symptoms of nervous derangement. The ulcer in achlorhydria he therefore regarded as "trophic." Such ulcers rarely or never perforated. Ulcers could also be produced by large doses of drugs or of bacteria, and ulcers in the duodenum had been experimentally produced by diverting the normal alkaline pancreatic secretion into the lower ileum, but none of these forms of ulceration was permanent; so soon as the stimulus that produced them was withdrawn they healed. The late Dr. John Hunter, in his study of the sympathetic system, pointed out that many muscles possessed the power of fixation only. Such muscles were apt to go into a state of spasm and were responsible for pylorospasm, cardiospasm, and certain cases of hour-glass stomach. The essential feature of such cases was a derangement of the central nervous system. In some cases a similar spasm was observed in the small intestine, and led to the bulging of the mucosa through the muscular coat at the points of entrance of the vessels, thus paving the way to the formation of permanent diverticula. He had actually observed this occurrence during an operation.

Returning to the question of the choice of operation, Dr. Mayo pointed out that gastro-enterostomy was not very successful in dealing with haemorrhage from duodenal ulcer, which was a symptom in 24 per cent. of such cases although serious haemorrhage only occurred in about 8 per cent. He concluded by referring to the necessity for travel and seeing new methods and hearing new theories if medical men were to avoid having a closed mind and becoming stereotyped in their work. In surgery it was essential to keep constantly in mind the ideal of achieving the desired result with the least possible damage to the patient.

A number of lantern slides showing the work at the Mayo Clinic, and Drs. William and Charles Mayo at their home, were shown by the PRESIDENT, and the meeting concluded after Dr. MAYO had replied briefly to a vote of thanks, proposed by Sir JAMES BERRY, seconded by Mr. NITCH, and carried with acclamation.

## PARASITIC SKIN DISEASES COMMON TO MAN AND DOMESTIC ANIMALS.

A MEETING of the Section of Comparative Medicine of the Royal Society of Medicine was held on May 27th, Mr. F. HOBDAY, the President, in the chair.

Dr. J. H. SEQUEIRA read a paper on the parasitic diseases of the skin communicated to man from the domestic animals. The paper was illustrated by lantern slides. This question, he said, was a most interesting one, and although a specially rich field could be found among such diseases from tropical and subtropical countries, he proposed to confine his remarks to those occurring in Britain. In recent years it had been found that so-called "eczema" was frequently due to micro-organisms and often was really scabies; this was true both for man and animals. He divided the skin diseases into four classes: (1) Animal parasites—due to the Sarcoptidae and Demodicidae. (2) Moulds—due to ringworm fungi. (3) Micro-organisms transmitted from animals, including such diseases as tuberculosis, anthrax, and glanders; and parasites inoculated by insects or deposited on the skin in their faeces. (4) Virus diseases such as cow-pox, foot-and-mouth disease, and, possibly, molluscum contagiosum.

*Animal Parasites.*—The most important of the mange mites from the point of view of intertransmissibility was *Sarcoptes scabiei.* No differences were found between those forms in man and those in animals—except possibly in point of view of size. Some of the animal forms were found not uncommonly in man; but in general, infection of the human subject was difficult. Other genera than this were found in animals, but were peculiar to them—with the exception of the mange mite of the cat, *Notoedres cati.* McDonald had recently drawn attention to the infection of a class of veterinary students from a diseased horse which was being dissected, and had given considerable details as to their symptoms and treatment. Cases from dogs were not infrequently reported, and occasionally also from the camel. *Demodex folliculorum* was generally considered a harmless human parasite, but it had been suggested that it might convey bacteria to the skin and be the cause of a form of "ring" impetigo. It appeared to be much more pathogenic in the domestic animals. A final animal parasite of interest in this connexion was the extremely rare subcutaneous hydatid, only two cases of which had been reported.

*Ringworm.*—Many species of ringworm fungi existed in man and animals, and there was a great deal of intertransmission of the various species. Two genera of fungi, Microsporon and Trichophyton, were responsible for ringworm, and one, Achorion, for favus. Many strains of these parasites existed, and the lecturer showed illustrations of ringworm in man caused by infections derived from cat, dog, and calf, that from the calf forming concentric characteristic rings. Dr. Sequeira quoted the case of a "lather boy" in a barber's shop who had contracted the disease from a customer (the fungus being of animal origin originally). The boy developed a lesion on his finger, which passed the disease on to the face of other customers. The forms from animals might be scaly, vesicular, or pustular—the last often developing into follicular or perifollicular abscesses. Favus was uncommon in Britain, and was usually seen in Polish immigrants and those who came into contact with them. It formed a distinct cup-like lesion ("favus cup"), and attacked both hair and skin, leaving very deep scars. It was not a common animal parasite, but evidence had been produced to implicate the mouse as a source of infection, and the infective chain was probably: mouse—cat or dog—man.

*Bacterial Diseases.*—Warty tuberculosis was the commonest form found due to inoculation, and was occasionally seen in those making *post-mortem* examinations or coming into contact with tuberculous discharges of human or animal origin. It formed a characteristic lesion with a scarified centre, a warty intermediate zone, and a purplish periphery. Anthrax was familiar as a malignant pustule, which, owing to public health measures, was now much less serious than in the past. It was curious that in negroes it appeared to be much less malignant than in Europeans. Glanders was now almost extinct in this country, and he personally had never seen a case.

*Virus Diseases.*—Dr. Sequeira referred to a case of cow-pox occurring in 1913 in a man from direct contact with cattle. The patient was 55 years of age, and had not been vaccinated since infancy. Cases were not uncommon of mothers being

infected by scratches from their own newly vaccinated children. Foot-and-mouth disease was another subject of great interest in connexion with this subject.

The PRESIDENT drew attention to the increasing importance of the animal diseases from the point of view of human health, and gave instances of cases which had come under his own notice.

Dr. A. STOKES raised the question whether actinomycosis could be considered as one of the diseases of animals directly transmitted to man.

Dr. T. W. M. CAMERON drew attention to a source of sarcoptic mange in man which was very often overlooked—namely, cattle, which were very extensively infected, at least in some parts of Britain, and were a source of "dairyman's itch." The parasites of the genus Demodex were of great interest. Mr. Stanley Hirst of the British Museum had recently published a most exhaustive monograph on the genus, in which he showed that the human species was not the same as that found in dogs; and that, in fact, most animals had their own peculiar species—unlike the mange mite *Sarcoptes scabiei*, only strains of which existed in the various hosts. It was very improbable that man could be infected by animal forms. At the same time the parasite must to some extent at least be contagious, otherwise one would be compelled to believe in spontaneous generation. The relationship of "follicular mange" to *Demodex canis* was a very vexed one. Many people believed that a micro-organism was the cause of the disease and the mite merely the carrier. He had often found the parasite in apparently healthy dogs, and it was probably as common as the human form was reported to be, and probably as little pathogenic as a rule. It was possible that the parasite merely found a convenient ground to develop in the primary lesions developed by the micro-organisms, but a *post hoc, ergo propter hoc* attitude must be rigidly avoided. He was very doubtful if actinomycosis, which was rapidly becoming a name for a symptom and not a disease, was ever transmitted from animals to man.

## AORTIC DISEASE.

AT a meeting of the Devon and Exeter Medico-Chirurgical Society held on May 21st, the Vice-president, Dr. R. WORTHINGTON, in the chair, Dr. G. L. THORNTON read a paper entitled "A few reflections on aortic disease," based on over five years' study of ex-service men.

Dr. Thornton laid emphasis upon the point that any conjectures and conclusions were purely personal, and in no case represented necessarily the considered views of the Ministry of Pensions. Aortic insufficiency offered special attractions as regards wealth of material for study. The ages of the patients ranged from the early twenties to 65 and upwards, the extremes being supplied for the most part by ex-naval ratings, the discharged "boy" and the chief petty officer, both engaged in active service at ages which were exceptional in the army. After referring to the six groups of aortic disease distinguished by Osler, Dr. Thornton added that in his paper he would limit himself to the endocarditic group (acute rheumatism), the syphilitic, and the arterio-sclerotic. The endocarditic group had supplied every degree of the disease from the case discovered accidentally, the condition causing little or no embarrassment at the time, to that of severe degree with rapidly failing compensation. In the milder cases had occurred what might be described as the "elusive, aortic diastolic murmur," and various clinical details were given in illustration of this and other conditions. Several examples were noted of the arterio-sclerotic type and age, the patients having failed rapidly after four or five years' service in the war, and it might be conjectured that the myocardium must have been exhausted before demobilization. Naval cases comprised the majority of those in which the condition had become rapidly worse since the completion of their service. The arterio-sclerotic type of case raised the question how far the increased tension had in itself a mechanical effect upon the aortic valves, and a great deal of evidence was forthcoming in this respect. In a series of cases of nephritis carefully analysed only 2 per cent. showed lesions of the aortic valve, although blood pressures as high as 260 were registered. Dr. Thornton remembered two high readings, one approximating 300, in men less than 30 years old, who at present showed no sign of insufficiency at the aortic valve although the condition had been under observation for several years. In both cases, nevertheless, the arteries were thickened, and degenerative changes might well be expected in the valves later in life. There seemed, however, to be no authority for suggesting the existence of any condition of the aortic orifice comparable with temporary regurgitation at the mitral valve, either as the result of strain or of the myocardium being weakened by acute illness. Although strain had a powerful influence for evil on the aortic valve, it would appear necessary to admit the presence of some contributory agent, such as syphilis or atheroma. In some cases a diastolic murmur heard over the aortic area had tended to disappear, but Dr. Thornton could recollect no case where some evidence did not persist pointing to valvular insufficiency, and as regards severity of a case the elusive diastolic murmur had been noted at both extremes of the scale. In several instances the Flint murmur had been detected when the aortic diastolic murmur was either absent or too faint for recognition. Not infrequently such a case had been first diagnosed as pure mitral stenosis.

With regard to symptoms, the general appearance of the patient had been frequently of great service in estimating the disease, and the nature of the cardiac pain gave valuable information, ranging as it did from a mere slight stuffiness in the throat in the milder cases, to the definite angina occurring in the later stages of atheroma. Intermediate degrees were associated with pain across the chest at the level of the nipples, especially the left breast. This distribution seemed to be often compatible with a large but otherwise well compensated heart. On the other hand, the most severe and anginal type of pain had been noted in hearts where pressure from enlargement could be discounted as a factor in the production of pain, and Dr. Thornton believed that the prognosis would be bad in any case, even without the ominous facial appearance, so often present, as a guide. The actual extent of the transverse enlargement of the heart or the position of the cardiac impulse had not provided any sure line of demarcation, but in the young patient, with a past endocarditic history of many years, rough guides could be formulated by calculating the hypertrophy which maintained the compensation and relating it to the apparent age of the affection. With regard to the Flint murmur, if there was a possibility of stenosis of the mitral valve being associated with aortic disease, the case must inevitably be considered grave, but in those cases where the mitral valve was healthy no indication could be drawn from the presence or absence of a Flint murmur. This murmur had been observed in nearly 50 per cent. of the cases, apart from those where there was evidence of the existence of mitral stenosis. It was unnecessary to consider the import of an apical systolic murmur, which was different in pitch from one heard at the base, and more especially if there was wide external conduction of the former murmur. Dr. Thornton alluded to the elusiveness or varying degrees of intensity of the diastolic murmur, and remarked that conclusive evidence of aortic regurgitation might exist without there being a constant diastolic murmur. Although the complete absence of an aortic second sound, either in the neck or at the base, was undoubtedly of serious significance, yet care was necessary before classifying the case as mild when the sound was clearly audible. The second sound had been present, though not necessarily at every examination, in at least 40 per cent. of the cases, and in many of these the symptoms had been so severe as to negative the presumption that the presence of the sound could be taken to indicate efficient closure of the valve, even if it was admitted that the second sound at the aortic area originated solely at the aortic ring. Still greater caution was necessary in atheromatous and syphilitic cases where there might be interruption of the innervation and local circulation of the myocardium. Auscultatory findings must be collated with the symptoms generally. Blood pressure readings had been very variable, though in the majority exceeding 140. Apart from high figures and the wide separation of the systolic and the diastolic readings, more information was derived when repeated routine examinations showed that

the pressure was steadily falling—the sign of a failing myocardium. Oedema, except at the ankles, and pulmonary stasis had been rare, even in the most severe cases, and albuminuria had rarely exceeded a trace, except when the aortic reflex was associated with nephritis. Nervous symptoms had not been prominent, but when present had always been found to be associated with advanced aortic disease and failing compensation. Actual mental disease, necessitating removal to a mental hospital, had been less common than would have been expected.

The prognosis seemed to be particularly difficult in aortic disease; once the diagnosis was established no case could be regarded lightly, either in the present or from the point of view of the future, bearing in mind the circulatory changes of middle life. No single symptom appeared to give a definite lead for forming an opinion; the guidance must be drawn from the sum total of the subjective and objective findings, and not infrequently in aortic disease the condition was clearly shown by the face of the patient. Dr. Thornton expressed his indebtedness to the Director-General of the Medical Services, Ministry of Pensions, for permission to publish his paper.

The CHAIRMAN referred to the pessimistic prognosis which had been attached to cases of aortic regurgitation in his student days. He was glad to learn from the paper that the disease was compatible, in some cases, with many useful years of life, and he quoted a parallel case of an old friend in medical practice.

Dr. WILLIAM GORDON was much interested in the elusive aortic diastolic murmur, which might be subclassified into the true elusive murmur which all observers failed to find from time to time, and the murmur which was easily missed on auscultation. He showed a form of telescopic single stethoscope which, when drawn out to full length, lengthened the wave and proved very useful in doubtful cases. Touching on prognosis, Dr. Gordon quoted Allbutt, who, writing on aortic disease, and from a long experience of an industrial city, gave twelve to fifteen years as the outside expectation of life from the time the murmurs were first notified. The longevity peculiar to Devon, which Dr. Gordon's statistics had proved in association with other disabilities, had probably a bearing on cardiac survival also. Rheumatic cases certainly survived longest, but syphilitic affections of the aortic valve were very grave unless treated energetically from the onset, and in this connexion he strongly advocated sodium iodide and deprecated injections of salvarsan. As regards congenital cases, the French had considered that the origin might be due to intranatal acute rheumatism. He also quoted a "traumatic" case, where the history pointed to a severe blow over the chest from a football. Finally, he counselled the meeting not to desert such valued friends as the iodides had proved themselves in treatment; whilst, in the literature of cardiac disease, *The Senile Heart*, by Balfour, would still give profitable reading.

Dr. H. JONAS mentioned his personal experience of an elusive aortic murmur, where the remainder of the cardinal symptoms of regurgitation were quite obvious. The murmur appeared, disappeared for a time, and finally became permanent. In his opinion suitable employment was of vital importance in treating the disease, and it was even better to take a little risk in recommending employment than to allow the patient time for brooding and introspection.

## OTORRHOEA.

AT a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland on May 22nd, the President, Dr. F. C. PURSER, in the chair, Dr. J. H. POLLOCK gave an account of 49 cases of otorrhoea observed in Cork Street Fever Hospital.

Dr. Pollock found that from 29 of these a pure culture of *Staphylococcus aureus* was obtained, and from 14 cases diphtheria bacilli were recovered. Treatment by autogenous vaccines resulted in cure or very marked improvement in practically all the staphylococcal cases. He did not think that syringing the ears with antiseptic solutions was beneficial. Very marked anaemia was often present in cases of otorrhoea. Diphtheria frequently occurred in cases of scarlatina and measles, though in these cases the diphtheria bacilli could rarely be obtained from the throat in the acute stage, but were found during convalescence.

The PRESIDENT said he had noticed that often in cases of severe sore throats, clinically resembling diphtheria, negative results were obtained from a bacteriological examination; diphtheria then developed, and later, when the patient was improving, diphtheria bacilli were recovered.

Dr. J. D. CUMMINS said that very often in cases of acute otitis media an obvious cause could be found in the naso-pharynx; this cause could be removed, if dealt with rapidly. Dr. W. D. O'KELLY was surprised that none of the cases recorded showed pneumococci, and thought that 29 staphylococcal cases out of 49 was a high percentage. Dr. H. F. MOORE thought the pneumococcus was a very common organism in cases of otorrhoea, and suggested that instillations of ethyl-hydrocuprein, which killed pneumococci, might be beneficial.

Dr. R. J. ROWLETTE suggested that vaccine treatment should be tried in the more acute cases as in the more chronic cases described. All these cases had been late ones, which would account for the very limited bacterial flora found. Otitis media was generally present in cases of influenza, but these patients seemed to recover without much treatment; he thought it possible that pneumococcal patients also recovered without much treatment. Dr. A. R. PARSONS said that some years ago Sir Robert Woods had found that pneumococci were present in a large number of cases.

Dr. V. M. SYNGE said that in the cases in which diphtheria bacilli had been found, no animal inoculations had been carried out, and therefore it could not be ascertained whether the bacilli were toxin-producing or no. Unless diphtheria bacilli could produce toxin he did not think that they were genuine. He was surprised to hear that Dr. Pollock found the diphtheria bacillus so frequently in the throat in cases of scarlatina and measles; in his own experience diphtheria had been very rarely associated with scarlatina or measles.

Dr. POLLOCK, replying, said that his reasons for postponing treatment until the cases became chronic were that a certain number of these patients recovered spontaneously, and that he wanted to avoid the chance of such recovery after the vaccine treatment had been started.

### *Osteomalacia.*

Dr. H. F. MOORE and Dr. J. HAYDEN described a case of osteomalacia in an unmarried woman aged 28, in which there was a complete absence of hydrochloric acid in the gastric juice. There was no bending or softening of the bones, though fractures of the pelvis had occurred. The blood calcium was reduced. Dr. Moore discussed the relationship of osteomalacia and rickets, and also referred to tetany. The patient was treated by one drachm doses of dilute hydrochloric acid three times a day. Rapid improvement occurred, and after seven weeks all fractures had healed, while the blood calcium had markedly increased. Dr. GERAGHTY showed *x*-ray photographs of the bones before and after treatment.

The PRESIDENT said that osteomalacia was a very rare condition: he had seen one case some years previously. Dr. V. M. SYNGE referred to the possibility of lack of vitamin being associated with the condition. It was generally believed at present that rickets was due to absence of the antirachitic vitamin.

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AT a meeting of the Edinburgh Obstetrical Society held on May 13th, the President, Professor B. P. WATSON, in the chair, a communication was read by Dr. JAMES HENDRY on the mobility of the uterus as a factor in the care of the third stage of labour and in the control of post-partum haemorrhage. Dr. Hendry described a simple method by which the mobility of the uterus after the second stage of labour could be taken advantage of. A communication was read by Mr. DAVID LEES on syphilis in pregnancy. The subject was gone into thoroughly, and the contentions of the author were illustrated by descriptive cases. The question of treatment was perhaps the chief import in the paper, and dual therapy was advocated, preferably with a preparation of arsenic and bismuth. No ill effects had been noted in the large number of cases so treated, and bismuth was tolerated well during pregnancy. Mercury could also be given, but not in such large doses, as tolerance was not nearly so good as with the other drugs.

# Reviews.

## THE RADIO-ACTIVITY OF MINERAL SPRINGS.

FOLLOWING on the discoveries of Becquerel and the Curies in France, and of Rutherford, Ramsay, and Soddy in England, scientists began to study, some twenty years ago, the radio-activity of the mineral springs in several of the European spas. Since then a vast amount of independent physico-chemical, physiological, pharmacological, therapeutic, and clinical research has been carried out. The results have now been collated and examined in an instructive volume[1] by M. PIÉRY, the lecturer on hydrotherapy, and M. MILHAUD, the director of the laboratory of therapeutics, hydrology, and climatology, in the Lyons School of Medicine. It is perhaps the most complete and exhaustive work yet published on the subject, and it is fitting that it should come from the Lyons school, for many of the best known mineral springs of France, such as Vichy, Mont-Dore, Royat, and La Bourboule, are in its immediate vicinity.

The volume consists of a short preface by Professor TEISSIER, an introduction, and four sections. The introduction describes the physical and chemical properties of the radio-active elements and the rarer gases, with a detailed description of the methods of detecting them and estimating their quantity. The unit of radium emanation employed is the millimicrocurie (m.mc.), adopted by the Congress of Radiology in Brussels in place of the German Mache unit (u.m.), which is equal to 0.4 m.mc. and therefore readily convertible. The emanations of thorium and actinium derivatives are measured as an electrostatic unit (u.e.s.), equal to 1,000 Mache units. With this essential preliminary information the authors, in the first section of the volume, describe in detail the results of researches into the radio-activity of mineral springs and its geological origin. Several useful tables are given showing the amount of radium emanation (niton) and gaseous products of the principal springs of France and other countries. Stress is laid on the need for estimating the value of radium emanation, not by the number of millimicrocuries in the gases per litre, but by the amount of gases given off hourly. In other words, the horo-radio-activity is the essential measure of emanation value. This is explained by comparing the results in some of the mineral springs. Thus the Boussanges spring, Vichy, has only 0.6 m.mc. of emanation per litre, but a discharge of about 60,000 litres of gas hourly. The horo-radio-activity is therefore 60,000 × 0.6, or 36,000 m.mc. of emanation hourly. On the other hand, the Vauquelin spring at Plombières, with 109.038 m.mc. of emanation per litre of gas, has only a delivery of 2 litres of gas hourly, so that its horo-radio-activity—218 m.mc.—is comparatively low. It may be mentioned in this connexion that the Choussy spring at La Bourboule, with 492,420 m.mc. of radium emanation hourly, is by far the most radio-active of all the French mineral springs. It has not only a high discharge of gas (3,480 litres hourly) but also an exceptionally high quantity of radium emanation (141.5 m.mc. per litre). In this first section the question of the mineral constituents of the various springs in relation to radio-activity is also considered. Several have small mineral contents or are merely thermal; others are rich in mineral salts and in sulphur, iron, or arsenic constituents. The former are consequently classified by the authors as radio-active springs properly so called, the latter as radio-active mineral waters in which the radio-activity is secondary to the mineral constituents. No tables are given of the estimate of thorium or actinium emanations. Owing to their extremely short life—a matter of seconds—this amount can only be measured satisfactorily at the point of emergence, unless there happens to be a thorium or actinium element in solution or in the sediment.

The next section is devoted to the biological and pharmacological effects of the radio-active bodies, their channels of absorption and elimination, and their action on the various organs and tissues. The chief difference between the radium and thorium emanation is their action on the blood corpuscles. Radium has little or no influence on these, whereas thorium is said to increase the haemoglobin and diminish the white corpuscles to a marked degree. The third section deals with the therapeutic action of radio-active emanations on individual diseases. Their value in gouty affections and that of thorium derivatives in diseases of the haemopoietic system stand out as the most determinate effects in hydrotherapy.

The final section contains a description of the installations and methods of radio-active therapy in individual spas of France and other countries, followed by chapters on the indications and contraindications of emanotherapy, as it is called, and on the choice of spas for the treatment of particular classes of disease. Much emphasis is placed on the provision and construction of emanatoriums or installations for the application of radio-active emanation by inhalation. The vault and dome method of construction adopted by the ancient Romans satisfied all the essential requirements. Without knowing why, they hit upon the most practical way of deriving benefit from the emanation in thermal baths. In this connexion the authors consider that the chief value of the immersion baths is due to the emanation given off from the surface of the water and inhaled, and not from absorption by the skin or other channels. Another point is that in places like Vichy and Bagnoles de l'Orne, where there is constant escape of radium emanation into the atmosphere surrounding the springs, patients undergoing the cure are inhaling emanation continuously during their sojourn. Loisel, for example, has stated that the air of Bagnoles is four times richer in radio-active emanation than the air in Paris. The climate, therefore, of the radio-active spas probably plays an important part in the cure, and cannot be transferred to other places in bottles, like the mineral contents of their springs.

The authors have written for the instruction of French balneologists and medical practitioners, but the book is commendably free from propagandism on behalf of the French spas. A chapter, for example, is devoted to the methods and installations in the radio-active bathing establishments of other countries. It includes a description of Bath and Buxton, the only two spas in Great Britain where, they say, radio-activity has been thoroughly studied. But in describing the mud baths they write strongly in favour of the thermal mud baths of France as compared with those of Germany, Czecho-Slovakia, Italy, and Russia. The French mud baths, of which St. Armand in the north-east and Dax and Barbotan in the south-west are the chief, are naturally radio-active because the springs flow through the mud deposits, whereas in those of other countries the mud is taken from the place of origin at a distance, and often with much delay, and mixed with the water of the springs, and is inert. Further, the French baths are employed at their normal temperature, the others are artificially heated. The former, too, are classed as radio-active properly so called, the latter are sulphur baths or strongly saline; and even those with the highest reputation, such as Battaglia in Italy and Franzensbad in Czecho-Slovakia, have a less radium emanation than the French mud baths. The conclusion of the argument, therefore, is that France is the country one must go to for a radio-active mud cure. At the same time, the authors acknowledge that the installation of emanatoriums in the French spas is, as a rule, inferior to that in the spas of Central Europe.

Piéry and Milhaud's work merits close study both by balneologists and by all medical practitioners who may be called on to recommend a spa cure to their patients. Hydrotherapy is emerging from its traditional empiricism; but there is still much to be accomplished, not only in perfecting the means and methods of applying the treatment for the cure of the class of patients who have hitherto derived benefit from a sojourn at this or that spa on purely empirical grounds, but also in investigating more closely the conditions under which radio-activity has its origin in each locality and the measure of its quantity.

Further research is needed to detect the presence of thorium, actinium, and other radio-active elements, especially their presence in the sediment and muds of mineral

[1] *Les Eaux Minérales Radio-actives.* By M. Piéry and M. Milhaud. Preface by M. J. Teissier. Paris: G. Doin. 1924. (Roy. 8vo, pp. 456; 4 plates (2 coloured), 45 figures, and 25 tables. Fr. 30.)

springs. The dosage and effects of emanation treatment have also to be studied more closely clinically. Much also has to be done in the way of constructing suitable emanatoriums and providing equipment for emanation inhalation.

## CHEMICAL ASPECTS OF IMMUNITY.

THE book by Professor H. GIDEON WELLS, entitled *The Chemical Aspects of Immunity*,[2] has been published as one of the American Chemical Society's series of scientific monographs, and is addressed chiefly to chemists. The technical language of immunology makes difficult reading to all but those who have approached this science by the road of specialized medicine; and the chemist, untrained in pathology, has hitherto received little encouragement in his efforts to master the subject of immunity. Medical science has been the loser thereby, for we must look to the researches of expert chemists for explanations of many of the serological reactions commonly used in diagnosis, and we may hope to learn more accurate quantitative methods from such allies.

Since he is speaking to a non-medical audience Professor Wells begins his book with an introductory chapter in which he defines the technical terms used in immunology, such as antigens, precipitins, agglutinins, toxins and antitoxins, lysins, and anaphylaxis. The ground having been cleared, he proceeds in subsequent chapters to discuss different immunity reactions from the chemical point of view. But this is not a book on chemistry: it is primarily a textbook of immunology, and medical men who have enjoyed the clear descriptions of serological and other technical terms in the introduction need not fear that later on they may find it difficult to follow because a chemist is speaking to chemists. We observe that immunologists are not repaid for their own inhospitality of language, and the author proves that both chemistry and immunity may be clearly dealt with in simple words. One excellent feature of this book is that at the end of each chapter the author has summarized the most important teaching on each theme in the form of a recapitulation, occupying a page or two of print. This enables the reader to pick up the essential points quickly: if read before the text of the chapter the orderly development of the argument becomes more obvious, and if read after the chapter the recapitulation fixes the essential points in one's mind. When touching on subjects which cannot be fully expounded in a book of this size Professor Wells supplies references to guide further study. By a skilful choice of analogies, gathered from wide fields of scientific knowledge, a new significance is often given to familiar facts. Thus, the chapter on immunological specificity is introduced in this inviting fashion:

> "We see the manifestations of specificity in so many and so varied processes that many of them are taken for granted, and others are not at first thought of as illustrations of the biological specificity which rules all the processes of life. It must obtain, from the fertilization of the ovum by the specific sort of spermatozoon which alone can enter the germ cell and stimulate division, on through the processes of growth which lead to the formation of specific structures characteristic of the species in form, composition, and function, on to the specific reaction to injury which leads to repair by the proper tissue elements and the specific methods and means of defence against invading enemies. The autumnal reddening of the maple leaf, the yellowing of the birch are as typical examples of chemical specificity as the secretion of a neurotoxic poison by the cobra or the production of antitoxin by a horse immunized with the poison of the diphtheric bacillus. The fact that a dog can follow the trail of his master and recognize him from all others by scent alone, shows that each of us is chemically individual."

Professor Wells's textbook on chemical pathology is known throughout the English-speaking world, and we predict that his monograph on the chemical aspects of immunity will receive an equally wide welcome.

[2] *The Chemical Aspects of Immunity.* By H. Gideon Wells, Ph.D., M.D. American Chemical Society Monograph Series. New York: Chemical Catalog Co., Inc. 1925. (Med. 8vo. pp. 254; 2 figures. 4 dollars.)

## AN INTRODUCTION TO SCHOOL MEDICINE.

Now that *An Introduction to School Medicine*,[3] by Dr. H. LESLIE CRONK, has appeared no doctor engaged in school medical inspection will remain content until such an extremely useful manual has a place on his bookshelf. Information on the minor departures from health of children attending school, their detection, causation, prevention, and importance, is given clearly and concisely, with full references to the authorities quoted.

Hitherto school medicine has been in a somewhat nebulous state, and each individual doctor engaged in the work has perforce had to work out for himself the deductions to be made from his daily experience and observations. The author of this book, who until recently was the assistant school medical officer in the county of Cornwall, has here set down the results of his own experience, with references to similar information collected by others. He states that:

> "The school is the link between the intimate sheltered life in the home and the strenuous fight of adult working years; in like measure the functions of the school medical officer lie midway between the personal attentions of the family doctor and the more general and impersonal activities of the medical officer of health."

The book contains a large amount of useful information, and may almost be said to be a complete equipment for a school medical officer.

The first chapters deal with the normal child as regards growth, food, sleep, and teeth; for, in order to recognize slight departures from the normal, the school medical officer must know the normal intimately well. Other chapters are devoted to the recognition of defects in the eyes, teeth, nose, ears, tonsils, and circulatory system. Statistics of various defects are set forth in tables, and the most recent tests are discussed helpfully in the text.

The recognition of tuberculosis in childhood is very carefully and fully dealt with. Deformities are grouped with particular reference to postural deformities, which generally arise during the school period. Very useful information with regard to infectious diseases and the checking of their spread is given. At the end of each chapter is a bibliography and the volume has an index.

The school medical service should be closely linked up with ante-natal and infant welfare care on the one hand and national insurance and factory inspection on the other. All should be co-ordinated to produce the best results in preventive medicine.

## ANNALS OF MEDICAL HISTORY.

THE first number of the seventh volume of the *Annals of Medical History*,[4] which, unlike most journals, has an ever-changing face on its cover, bears on the outside the portrait of Tobias Smollett, whose life is sketched in an interesting manner by Dr. C. K. Drinker of Boston; the well illustrated account of life in Bath, then under the rule of Beau Nash, when Smollett was resident and unsuccessfully sought practice from 1746 to 1762, comes at an appropriate time in connexion with this year's meeting of the British Medical Association. The frontispiece is a reproduction of the print of the portrait of William Cadogan (1711-97) by R. E. Pine in the Royal College of Physicians of London; Cadogan's "Dissertation on the Gout and all Chronic Diseases jointly considered" and a contemporary satire in verse on the author are reproduced with some notes by Dr. John Ruhräh of Baltimore. Dr. Hermann Goodman writes on "Master Dermatologists, based on Diseases named after them," which will serve as a storehouse of information to those interested in eponyms. Dr. Leroy Crummer has done well to provide some further information about early anatomical fugitive sheets as a supplement to his earlier article on the same subject in the fifth volume of the *Annals*; he also writes an appreciative review of Mr. Geoffrey Keynes's *Bibliography of Sir Thomas Browne*. The life of James

[3] *An Introduction to School Medicine.* By H. Leslie Cronk, M.A., M.D., D.P.H.Camb. London: H. K. Lewis and Co., Ltd. 1925. (Cr. 8vo, pp. x + 236; 38 tables. 7s. 6d. net.)

[4] *Annals of Medical History* (Spring Number, 1925). Vol. vii, No. 1. Edited by Francis R. Packard, M.D.Philadelphia. New York: Paul B. Hoeber, Inc.; London: Baillière, Tindall and Cox. 1925. (8½ × 12½, pp. 102; illustrated. Subscription in Great Britain £2 2s. per volume of four numbers.)

Mease (1771-1846) of Philadelphia, who was known for his thesis on hydrophobia, which, greatly daring custom, he wrote in English as "being generally useful to my countrymen," is described by Dr. W. S. Miller in an article with a number of illustrations and many annotations. In the interesting article "Su-wen, the Basis of Chinese Medicine," Dr. Percy Dawson utilizes the summary recently given by L. Weiger of this previously untranslated work of unknown authorship, dating from the end of the fourth century B.C. The system revealed in the work is related to the Taoist philosophy. The primordial body, being Su-wen (mystery), is without form or figure and is invisible and impalpable, but enters into the formation of all bodies. The work shows that the Chinese recognized by conjecture, but not by experiment, the circulation of the blood twenty centuries before Harvey's discovery. Among the book reviews which are a feature of the *Annals* attention may be called to the editor's appreciative critiques of Professor M. Bloch's *Les Rois thaumaturges* and Dr. G. C. Peachey's *Memoir of William and John Hunter*; with regard to the wretched story of Home's conduct in dealing with Hunter's manuscripts, Dr. PACKARD considers that more might have been said, but he explains the length of his review by the good reason that this monograph is "by all odds the best account of both the Hunters which has yet appeared."

## FREUD'S COLLECTED PAPERS.

WE have received three volumes of *Collected Papers*[5] by Professor SIGMUND FREUD, and it is proposed to publish a fourth in order that a translation of the whole of the *Sammlung kleiner Schriften zur Neurosenlehre* may be available for English-speaking readers. The papers in this series have been re-grouped, in co-operation with their author, so that they do not follow the same order as in the German original. The date when each paper was written is given, and the editorial preface insists that the only satisfactory way of acquiring a knowledge of Professor Freud's writings is to follow the order of development of his work. Volume I contains the early papers and a lengthy account of the history of the psycho-analytic movement. Volume II includes a number of purely clinical papers, together with some dealing with subjects of general interest; the second section contains all those papers relating directly to the technique of psycho-analysis. Volume III contains psycho-analytic studies of five individual cases.

## NOTES ON BOOKS.

INTO a little book, the *Pharmaceutical Pocket Book*,[6] the Pharmaceutical Society of Great Britain has succeeded in condensing the whole duty of the pharmacist. There is an excellent chapter on the science and art of dispensing, worth reading by the doctor, especially in the matter of incompatibility in prescriptions, which is most delicately dealt with. The dispenser, it is said, must endeavour as far as possible to fathom the intentions of the prescriber; changes are sometimes brought about intentionally; but if the incompatibility is such that the apparent intention will be frustrated, the dispenser should, if possible, communicate with the prescriber. This chapter will be found valuable even by the doctor who does his own dispensing. A list of all the preparations of the *British Pharmacopoeia* is given, the doses are stated in imperial as well as metric proportions, and there is a useful table for the conversion of imperial into metric doses. There are chapters on the analysis of milk, water, and urine; on endocrine organs, food, bacteriology, and poisons. In these matters it might have been wise to lay down the rule that they concern the medical man, are of interest in the complete study of pharmacy, but are not suitable for exploitation as side-lines in the business of a pharmacist. At the same time a knowledge of poisons and their antidotes may well be of value in an emergency. Of greater importance to the student and practitioner of pharmacy is the chapter on the conditions of sale of poisons in Great Britain, which has been relegated to small type at the end of the book. The completeness of the little book is shown by its extensive dictionary of synonyms, its table of veterinary posology, and its inclusion of an artice on the mysteries of homoeopathic dosage and nomenclature.

In *Rejected Addresses* we are told that—

> Emmanuel Jennings brought his youngest boy
> Up as a corn-cutter, a safe employ.

That was more than a hundred years ago, and now each successor of red-headed Pat is dignified with the title of "chiropodist." This word has always seemed to us a strange one. Compounded of the Greek words for hand and foot, it means, etymologically speaking, nothing in particular. The logical French, with far more reason, call those who minister to the cutaneous troubles of the feet "pedicures," and it seems a pity that the well intentioned persons who established the Incorporated Society of Chiropodists did not adopt this name for their specialty. Mr. NORMAN C. LAKE, who is the author of *Lectures to Chiropodists*,[7] has been so good as to enlighten and entertain the members of this society and their brethren by instructing them in a number of interesting matters, lying, however, outside the treatment of corns and callosities, and such like. The life and work of Lister, anatomy, pathology, club-foot, pain, gaits, varicose veins, and the antiquity of man are only a few of the subjects dealt with. We have no doubt that the students of chiropody were edified, for, as far as it goes, this book forms a useful elementary introduction to various branches of knowledge.

The post-graduate lectures on cancer, delivered under the auspices of the Fellowship of Medicine, have been published in one volume, edited by Mr. HERBERT PATERSON, under the title *Post-Graduate Lectures on Cancer*.[8] The conditions under which such lectures are given lead to emphasis being laid on practical questions such as those with which the practitioner is faced each day, and therefore such a book as this, though it adds nothing fresh to our knowledge of cancer, is likely to be welcomed by many because of its practical character. Eleven lectures are reprinted in this book, the first being by Sir Thomas Horder on "Some medical aspects of cancer," and the second by Dr. Archibald Leitch on "The general pathology of cancer." The remaining nine deal respectively with cancer as it affects some different region of the body—namely, the larynx, oesophagus, breast, stomach, uterus, intestines, kidney, bladder, and rectum, each lecture by an expert in the particular subject. Sir JOHN BLAND-SUTTON observes in a preface written to this book that fortunately these lectures are free from discussions relating to operative methods, and anticipates that their clinical character will make them extremely useful to practitioners.

*Pediatrics for Nurses*[9] is the outgrowth of a series of lectures given by Dr. BALDWIN at the Johns Hopkins School for Nurses during the past six years. It is clearly written and contains twenty-five illustrations and charts; but it is cumbersome and its price would make it in general prohibitive for English nurses. The final chapter on the convalescent child touches on new ground and contains helpful suggestions. In the earlier part of the book the chief interest lies in differences between American methods and those in use in England. Information concerning the normal infant and the premature infant, and the care and feeding of both, is given. Other chapters are devoted to the therapeutics of infancy and childhood, rickets and scurvy, infectious diseases, skin diseases, tuberculosis, syphilis, and the neurotic child. A picture of a cap to prevent rumination is given. The book should prove useful to doctors who lecture to nurses in this country as a basis of comparison between English and American methods.

We have received a copy, printed in pamphlet form,[10] of the address delivered to a meeting of the North of England Branch of the British Medical Association last October by Dr. WILLIAM ROBINSON, consulting surgeon to the Royal Infirmary, Sunderland. Dr. Robinson's thoughtful address, entitled "On Brains," dealt with the subject mainly from the physiological point of view. His pamphlet is reprinted from the *Northern Counties Medical Journal*.

[5] *Collected Papers*. By Sigm. Freud, M.D., LL.D. Vols. I and II translated under the supervision of Joan Riviere; Vol. III by Alix and James Strachey. Vol. I published by the International Psycho-Analytical Press, London (1924); Vols. II (1924) and III (1925) by Leonard and Virginia Woolf, at the Hogarth Press, London. (Roy. 8vo, pp. 359, 404, and 607. Prices: Vols. I and II, 21s. net; Vol. III, 30s. net.)

[6] *The Pharmaceutical Pocket Book for Practitioners and Students*. Eleventh edition. London: The Pharmaceutical Press. 1925. (Pott 8vo, pp. viii + 438. 3s. 6d. net.)

[7] *Lectures to Chiropodists*. By Norman C. Lake, M.D., M.S., D.Sc.Lond., F.R.C.S.Eng. London: Incorporated Society of Chiropodists. 1925. (Demy 8vo, pp. ix + 245; 5 plates. 10s. net.)

[8] *Cancer*. Post-Graduate Lectures delivered under the auspices of the Fellowship of Medicine. Vol. II. Edited by Herbert J. Paterson, with a preface by Sir John Bland-Sutton, LL.D., F.R.C.S. London: J. Bale, Sons, and Danielsson, Ltd. 1925. (Demy 8vo, pp. xvii + 186; 15 plates, containing 43 figures. 12s. 6d. net.)

[9] *Pediatrics for Nurses*. By John C. Baldwin, M.D. New York and London: D. Appleton and Co. 1924. (Demy 8vo, pp. viii + 251; 25 figures. 7s. 6d. net.)

[10] Newcastle-upon-Tyne: Andrew Reid and Co., Ltd. 6d.

# INTER-STATE POST-GRADUATE ASSEMBLY OF AMERICA.

## LONDON MEETING.

THE 550 members attending the Inter-State Post-Graduate Assembly of America carried through a heavy instructional and social programme in London before going north on Sunday last. The mornings were devoted to a succession of half-hour lectures, the afternoons to hospital demonstrations, and the evenings to receptions and other functions, culminating in the great banquet in the Guildhall of which some account is given below. On every possible occasion, public and private, the American visitors expressed their warm appreciation of the hospitality, intellectual and social, which had been afforded them, the value of what they had been privileged to see and hear, and the organizing capacity of the executive and officers, in particular their compatriot Mr. Philip Franklin, which had made the meeting possible. Dr. Charles Mayo said repeatedly that nothing would content his colleagues except a return visit of British practitioners *en masse*.

At the end of the series of lectures in Wigmore Hall Dr. Mayo invested a number of representatives of British medicine with honorary membership of the Assembly. These were Sir Humphry Rolleston, Bt., P.R.C.P., Sir John Bland-Sutton, Bt., P.R.C.S., Lord Dawson of Penn, Sir StClair Thomson, Sir Arbuthnot Lane, Bt., Mr. W. Girling Ball, and Mr. Philip Franklin. It was announced that Sir Holburt Waring, Sir William Hale-White, Sir John MacAlister, and Sir George Newman, who could not be present, were also to be admitted to the fraternity, and at the Guildhall banquet Mr. Neville Chamberlain, Minister of Health, was made an honorary member.

### SECOND LECTURE SESSION.

Some account of the opening session appeared in our last issue (p. 1051). At the second session, on the morning of June 3rd, six lectures were given, Sir JOHN BLAND-SUTTON presiding.

#### *Renal Disease.*

The first was by Professor H. MACLEAN, who discussed some aspects of chronic renal disease. He confined himself to ordinary chronic interstitial nephritis characterized by the usual symptoms of retention of nitrogenous waste products and cardio-vascular disturbance. This disease, he said, was progressive and ultimately hopeless, but it was possible by certain tests to form an idea as to the length of time which would elapse before the fatal termination. Within the last ten years very elaborate methods had been introduced in order to ascertain the condition of the renal system, though in Great Britain, on the whole, these had not found much favour. At St. Thomas's, at all events, it was believed that as much information could be gathered from the simpler tests as from the much more elaborate ones. The test most frequently employed was the estimation of blood urea, but the mere fact of a patient showing a high blood urea was no evidence whatever that that patient was suffering from renal disease; if high blood urea indicated renal deficiency, naturally the urine would show a low percentage of urea, and when both the patient's blood urea and the percentage of urea in the urine were high it might be taken as certain that renal disease was not the primary condition. He described a urea concentration test, involving a fifteen-hour abstention from liquid, and thereafter periodic examination of the urine, which was a test, he said, that could be carried out in general practice, and in 90 per cent. of cases would furnish all the information it was possible to obtain. He added that although the textbooks stated that sometimes there were cases of uraemia without albuminuria he did not think it was realized how common this state of affairs was; rather more than 5 per cent. of those individuals who had definite renal changes showed no albuminuria at all.

Sir JOHN BLAND-SUTTON remarked that the impression which the lecture had left on his mind was that their knowledge of the urinary functions was as unstable as their knowledge of the universe!

#### *Gastro-jejunal Ulcer.*

Mr. A. J. WALTON, who lectured on gastro-jejunal ulcer, said that in this country a large number of gastro-enterostomies had been performed by men whose experience had been limited to a small amount of war surgery, and no doubt the incidence of complications had been increased as a result of technical errors; but before gastro-enterostomy was replaced by another operation it ought to be remembered that in the hands of the experienced surgeon the operation had a mortality of well under 1 per cent. He had never yet seen a case of true jejunal ulcer; every case had been gastro-jejunal, the ulcer invariably starting at the junction. At one time he believed that gastro-jejunal ulcer was due to the use of a wrong form of suture at the operation, but since the use of silk had been given up gastro-jejunal ulcer had not disappeared, though its incidence had decreased; therefore it could not be put down entirely to the use of non-absorbable suture. Any gross errors of technique certainly did increase the tendency to this complication, but minor variations such as all surgeons practised had no bearing whatever, in his belief, on the incidence. It had been assumed that partial gastrectomy did not carry with it any risk of gastro-jejunal ulcer, and there had been published a large series of cases of partial gastrectomy, generally by surgeons of wide experience, which showed that the mortality of such an operation could be very low. But if the operation was done widely by many surgeons there was no question that the mortality would not be low. The removal of so large an amount of healthy tissue as was involved in partial gastrectomy was an extreme step to take, and he held that this was too severe an operation for the routine treatment of gastric and duodenal ulcers. It should be reserved for those cases in which a gastro-jejunal ulcer had developed.

#### *The Combating of Venereal Disease.*

Colonel L. W. HARRISON gave an account of the combating of venereal disease in Great Britain by the free treatment of the infected. He mentioned that as long ago as 1899 the British Medical Association proposed at the Brussels Conference on Syphilis a resolution, which was carried, to the effect that all governments should appoint a commission to determine the frequency of venereal disease in the civil population, to inquire as to the facilities for treatment available, and to collect opinions as to the best methods of securing control of venereal disease. Treatment centres in this country numbered 193, of which 142 were in voluntary hospitals, and 51 (in places where it was not possible to obtain such facilities in the hospital) were centres controlled directly by county or county borough councils. The work of the treatment centres was shown by comparing the number of new cases for two recent years:

| | 1920. | | 1924. |
|---|---|---|---|
| Syphilis ... ... ... | 42,805 | ..... | 22,010 |
| Gonorrhoea ... ... ... | 40,284 | ..... | 31,272 |
| Soft chancre ... ... ... | 2,442 | ..... | 1,098 |

At the same time the number of attendances at the centres had gone up, from 1,488,514 in 1920 to 1,645,415 in 1924. It was stated that many persons ceased attendance before treatment was completed, but it was easy to exaggerate that figure. Many of the cases put down as having ceased attendance were those in which the venereal condition had quite cleared up, but the patients were under observation or treatment for some intercurrent condition; others, again, resorted to some fresh clinic and were put down as having given up treatment. The cost of treatment (including laboratory work, supply of arsenobenzol to practitioners, and propaganda) was £380,000 in 1923-24.

*Cancer of the Rectum.*

Mr. W. ERNEST MILES gave a lantern demonstration of the pathology and spread of cancer of the rectum. He said that cancer of the rectum accounted for more than one-third of the cancerous growths which occurred in the alimentary tract. Cancer spread in the rectum in three ways: by the venous system, by direct continuity of tissue, and by the lymphatics. The extent of the circumferential involvement was an indication both of the duration of the disease and of the depth of the local infiltration. The tendency of the spread was upwards, and therefore it was necessary to bring into the area of operation a sufficient upper zone, in particular the pelvic mesocolon, which corresponded in its importance from the point of view of spread of infection to the axilla in cases of breast cancer.

*Auricular Fibrillation in Exophthalmic Goitre.*

Mr. T. P. DUNHILL spoke on the surgical treatment of exophthalmic goitre from the point of view of auricular fibrillation. He began the operative procedure in these cases—the patient having been got by the physician into the best possible condition—by ligating one artery in order to test the reaction to operation, then, after a rest of ten or twelve days, another vessel was ligatured, followed by another long rest, after which one lobe of the thyroid was removed, and later from one-half to two-thirds of the second lobe. The cases were put on quinidine, but quinidine could not get them regular while the thyroid toxin was still working on their heart muscle. Quinidine was able to act on the heart muscle to restore it to regularity, but there was a toxin in the thyroid which was able to interfere with the neuro-muscular heart mechanism and make it fibrillate, and so long as that continued quinidine was of no permanent avail. The chief danger was in operating on the wrong type of case. Of 26 patients he had operated on, 3 had died, and 2 others had had only one lobe removed, and still fibrillated on exertion; the remaining 21 had never fibrillated from the time the operation was completed, and the records went back to 1919. The treatment was lengthy—each case would take from six to nine months for the medical and surgical procedures.

*The Heart in Influenza.*

The concluding lecture was given by Dr. STRICKLAND GOODALL, whose subject was "The heart in influenza." He said that a critical survey and analysis of the history of large numbers of heart cases which he had had the opportunity of examining carefully during the past twenty years had convinced him that the etiology of heart disease in this country was changing. Up to a few years ago the only antecedent disease to which any attention was paid in connexion with heart trouble was rheumatism, and if it was found that the patient had suffered from no rheumatic manifestations very little heed was paid to any other complaint from which he might have suffered. Within the last few years one had been struck by the fact that there were a very large number of cases in which definite heart involvement occurred with an antecedent history of influenza. He showed electrocardiograms of cases every one of which had been the subject of the most critical examination for rheumatic history, and no such history had been elicited. These were cases of acute paroxysmal tachycardia of the ventricular region, or auricular fibrillation or flutter, all following upon mild influenza. It was not true that influenza gave rise to a poison which caused many different diseases; all these conditions represented injuries to the myocardium, which was poisoned, with consequent impairment of function. The influenza virus was a muscle poison which might attack any part of the heart. If it attacked the auricle it gave rise to auricular fibrillation or flutter; if it attacked the bundle of His it gave rise to heart-block, temporary or permanent; and if it attacked the ventricles it gave rise either to extra-systoles or to ventricular fibrillation. The myocardial condition following on influenza might develop from seven to twelve days after everything seemed well, the gastro-intestinal disturbance having cleared up, and the doctor having ceased his visits.

## THIRD LECTURE SESSION.

*Medical Research in Great Britain.*

The third lecture session, on the morning of June 4th, was held under the presidency of Sir STCLAIR THOMSON. A sketch of medical research in Great Britain was given by Sir WALTER FLETCHER. He claimed that in this country there had never been wanting men of first-rate ability in science, but research had been crippled by want of means, and that discredit was most marked when the country was most rich. The great achievements of scientific men had been largely dependent upon the accident of financial ability. What would Sir Isaac Newton have done without the monastic endowments which came to Trinity College, Cambridge? It was the endowments of the Royal Institution which supported Faraday in his great work and made Albemarle Street the cradle of the electrical industry of the world. Darwin was able to do his work because he was a rich man, and the same was true of Lord Rayleigh. Very few British statesmen had appreciated the national and world value of helping on the new knowledge. He could name only four conspicuous princes or statesmen in England who had made a mark in this particular. These were: Henry VIII, who endowed colleges under the advice of Thomas Linacre, founder of the Royal College of Physicians; Charles II, who founded the Royal Society; Albert, Prince Consort, who took an active part in the promotion of scientific institutions and research in the middle of the last century; and Mr. Lloyd George, to whom three remarkable departures were due—the foundation of the Development Commission, which had to do with the development of roads and agriculture, the foundation of the Medical Research Council, and, modelled on the Council, the foundation of the Department of Scientific and Industrial Research. The lecturer described the functions of the Medical Research Council, which at first had £40,000 a year to spend, and now, in spite of the impoverishment caused by the war, had £140,000. That annual appropriation had been of immense value. He told the story of the beginnings of the work at Cambridge by Hopkins and others on nutritional problems, and also other episodes of recent research. The State recognition of research had served to stimulate voluntary endowments, and here he mentioned the generous benefactions of the Rockefeller Foundation, which since the war had expended two million sterling in Great Britain, besides one and a half million sterling in other parts of the British Empire.

*Symptoms of Suprarenal Disease.*

Dr. GORDON HOLMES addressed the Assembly on certain symptoms of suprarenal disease. He described two cases which chance had brought in his way which threw some light on the functions of the cortex of the suprarenal body. Hitherto very little had been known of the effects of pathological lesions affecting the cortex. One of these cases, in a girl, exhibited signs of sexual inversion; after a period of normal development, with commencing menstruation, the menses ceased, and she began to show male characteristics, both physical and mental. Ultimately a large tumour was discovered projecting under the liver. On removal one-third of the tumour tissue was found to be identical with the cortex of the normal suprarenal body. Thirty-six days after the tumour was removed she recommenced menstruation, in three weeks an abnormal growth of hair began to fall away, and in three months no trace of abnormal hair remained on face or trunk, her figure began to develop the female shape, and she was now a normal young woman. The other case was that of a girl, very obese and mentally dull. Pituitary disease was suspected, but the type of obesity was not that which was found in such a condition. Ultimately this girl died of bronchopneumonia, and at the autopsy striking changes were found in the suprarenals, almost all the cells of which were abnormal.

*Operation in Gastric and Duodenal Ulcer.*

Mr. JAMES SHERREN dealt with the considerations that should guide the decision as to operation and the choice of operation in chronic gastric and duodenal ulcer. The more one saw of chronic duodenal ulcer the more one realized that it was a condition associated with a great amount of

risk. In the hands of a surgeon used to abdominal work operation was the safest form of treatment. New operative procedures were constantly being brought forward, but duodenectomies and wide partial gastrectomies were no guarantee against recurrence of the ulcer. He believed that gastro-jejunostomy, efficiently carried out, would bring about the healing of all duodenal ulcers, except those very large ulcers which eroded the pancreas, and sometimes even those would respond. The problem was to prevent secondary ulceration, and all efforts should be directed to that end. To bring about healing the gastro-jejunostomy must be efficient, it must be posterior, vertical, and extending from the lesser to the greater curvature. In uncomplicated cases he thought the duodenal ulcer should be left alone. He only dealt directly with the ulcer when it had been causing recent haemorrhage. With regard to chronic gastric ulcer, the danger of the development of carcinoma had to be reckoned with. There was no doubt that malignant disease did develop on simple gastric ulcer. Small mobile ulcers were quite well treated by gastro-jejunostomy. Large indurated ulcers eroding the pancreas and liver should be treated by partial gastrectomy. He urged as far as possible conservative treatment of lesions, believing that any additional cures which might occasionally be obtained by more radical procedures were more than set off by the increased risk.

*Cancer of the Larynx.*

Sir STCLAIR THOMSON, after some remarks on cancer in general, from which, he said, 50,000 people in this country died last year, spoke on cancer of the larynx. Intrinsic cancer had yielded in his hands 80 per cent. of lasting cures—by "lasting" he meant anything up to fifteen years' survival. He described by means of successive lantern illustrations his technique in the practice of laryngo-fissure. He deprecated laryngectomy when laryngo-fissure was shown to be not very complicated, but certainly safe, and affording lasting results. Complete laryngectomy was much more successful nowadays than formerly, in respect of operative mortality and ultimate results, for the good reason that it had been almost entirely abandoned for extrinsic cancer. He had done laryngo-fissure some sixty-six times. He gave no opiate of any kind before or after operation, because he had found that this led to a certain amount of operative mortality. As illustrating the sex incidence, sixty of the sixty-six cases were in men. In intrinsic cancer of the larynx it ought to be generally recognized that hoarseness was the first symptom. Persistent hoarseness for more than three weeks should lead to the case being examined by an expert. Sir Felix Semon used to regard fixation of the cord as the characteristic, common, and early symptom. It was certainly characteristic, but it occurred late, and unfortunately many cases escaped treatment because, it was said, the cord was mobile. But to wait until the cord became immobile meant a deeper infiltration. Sir StClair Thomson showed five patients on whom laryngo-fissure had been done. All of these were cases of cancer which had been confirmed by the microscope, and in all of them the patients appeared well, and were able to speak with more or less ease.

*Functional Nervous Disturbance in Children.*

Dr. H. C. CAMERON took the audience away from the operating theatre and the laboratory to what he called "the growing point of all neuropathy" in the forcing-house of the nursery. It was only the physician, he said, who was able to detect the very first deflections caused by psychopathic processes, and from all the tangle of forces acting on the child in the home to isolate that which was responsible for any particular disturbance. There was a certain resemblance between the abnormal conduct of an unstable child and of persons who had come to be definitely regarded as insane, between the symptoms which resulted from the functional weakness of the immature brain and those which resulted from degeneration and disease; in ascent and descent the same country was traversed. One of the commonest results of excessive mothering was the production of what he called—to borrow a word from the vocabulary of the alienist—negativism. The negativistic child was the one who, if it were proposed to him that a movement be made downstairs, would immediately rush to the top of the house. Negativism was the response to a fault of parental management indicated by a constant and repeated attempt to secure control and a constant failure to achieve. One of the commonest things about which doctors were consulted was want of appetite—often a veritable anorexia nervosa. Among poor children this fault was hardly ever met with, for obvious reasons, but in well-to-do households the child who persistently refused food was quite familiar, and usually the food that was refused was the nutritional milk and so forth which the parent particularly wanted him to take. The way to combat this refusal to take food was completely to alter the suggestion with which the food was brought. The mother should give the appearance of haggling over the food she wanted the youngster to take, the second helping should be conceded with a proper amount of reluctance, and this camouflage might induce a willingness to take what had absolutely been refused before. It was easy to see the part that negativism played in pseudo-constipation; in some cases of negativistic resistance the child had actually to be given a state of diarrhoea or even incontinence before the resistance could be overcome. Another group of common nervous disturbances in children were ingrained and perpetuated by the ill judged efforts of the parents to stop them. It would be better to correct the habit of infantile thumb-sucking by ordering the child in the most peremptory fashion to suck his thumb three times a day. In infantile masturbation the awful anxiety of the mother often served only to fix the habit in the child. If splints were used to prevent masturbation it was worth while to take any amount of trouble to convince the child that the apparatus was used for some other purpose, otherwise the child's attention was riveted on the fault. Purposeless crying, again, was due to the emotional reaction produced in the mother by the cry. In the nursery there was scope for an elementary sort of psycho-therapeutics, and the task of the medical man was to see that the tremendous force of maternal attraction was used for good, and not, as often happened, for ill.

*The Speed of Life and Disease.*

The final address was given by Lord DAWSON OF PENN, who spoke on "The speed of life and disease." He remarked, as Sir Thomas Horder had done two days previously, on the change which had taken place in the character of disease. In the West, at all events, pestilences had ceased to devastate the peoples, though it was true that cancer remained, baffling and destructive. A time might be anticipated when specific diseases would be relatively small factors in the general mass of ill health, and their place would be taken by subinfections which caused slow deterioration instead of quick destruction. Many of the causes of the subinfections lay within them—for instance, the streptococcus and the colon bacillus. The microbes of acute infections invaded the human organism in force and laid it low—they were a visitation, and on recovery of the patient they disappeared; but the microbes of the subinfections, like the poor, were always with them, they shared the active life of their host, troubling him little when he was fit, taking advantage of his indispositions. Against these subinfections the measures of public health were of small avail. Here the last word was with the individual. The thoughts of the medical man went first to the treatment of the foci. It was true that where these foci could be treated all authorities would agree that they should be, though in medicine there was no such word as "always," and it might sometimes be better to leave the focus *in situ*. It was necessary to approach these subinfections with more judgement than had hitherto been applied to them, and assess the part they played and the advantage and difficulty of their removal in each case. The effects of subinfection depended on the vitality of the individual and on the conditions of his life. A measure of struggle promoted health, but when the struggle was severe and continuous, as it was in modern life, the result was to produce not strength but stress. Material progress, especially in all that concerned movement, had been so rapid that it had outstripped man's rate of adaptation. Men were so tuned up that they carried over the tension from their work to their play, and the result was fixity, not flexibility. Much might be done by a more careful selection of careers and

employments—not by an official system of card-indexing, but by a careful study by the medical man of each individual case. Everyone was familiar with the man of sound physique, strong digestion, good staying power, with an impressionable nervous system, sensitive, ambitious, whose attitude to modern life was one of tension, who had lost his capacity for relaxation, who could never let go. That man, in spite of vaso-constriction and rising blood pressure, was unaware of any untoward happening, and went on apparently just as efficiently as before. His very constitution became his own undoing. If he had a mild illness it might be the saving of him. But he went on until at last, with little or no warning, cerebral haemorrhage, cardiac insufficiency, or some infection not serious in itself but serious to him, brought about his end; he died of his qualities. In another man of a somewhat different type the effect of strain showed itself in disordered movement and disordered secretion of the gastro-intestinal tract. Often such a man was said to be suffering from colitis—a blessed word—but the nearer one came to the beginnings of disease the more difficult it was to bring the description within a definition. The remedies belonged largely to that side of medicine which was known as education. The tense and hypersensitive people must be taught how to maintain relaxation: the country retreat, the Sunday ramble, the quiet game, the rhythmic exercise, the cult of the garden, the browse in the library, the evening with music, the periodical getting back to nature or to the cloister. Man still needs the "desert place apart" and what it implies.

## THE GUILDHALL BANQUET.

The ancient Guildhall, lent by the Corporation of the City of London, gave a mellow setting to the great banquet which was the last official event of the Assembly in the capital. On this occasion the visitors, after being guests all the week, became the hosts, and hosts in what they as well as those they entertained might regard as one of their ancestral halls. Gog and Magog overlooked a company of seven hundred seated at the tables, and only by the use of microphones and amplifiers could the speeches be heard in every part of the hall. There was a hint of mediaeval ceremonial in the white-capped chef on his high platform carving the baron of beef, and the turtle soup was ladled out lovingly in the manner dear to the City Fathers. A rumour had been circulated that the banquet was to be "dry," but presumably it was held to be unthinkable that the Eighteenth Amendment should extend to the Lord Mayor's banqueting chamber, and the proceedings were, in Sir StClair Thomson's phrase, "not wet, but pleasantly moist."

Dr. CHARLES H. MAYO, who presided, had the Right Hon. Neville Chamberlain (Minister of Health) and Mrs. Chamberlain on his right and left hand, and others at the principal table were:

Mr. Ray Atherton (First Secretary, U.S. Embassy), Sir James and Lady Berry, Vice-Admiral and Mrs. Joseph Chambers, Lord and Lady Dawson of Penn, Sir Alfred and Lady Fripp, Sir Kenneth and Lady Goadby, Sir Thomas Horder, Dean Inge, Viscount Knutsford, Sir William and Lady Arbuthnot Lane, Major-General Sir William and Lady Leishman, Dr. and Mrs. Franklin Martin, the Right Hon. T. P. O'Connor, M.P., Sir Cooper Perry, Sir D'Arcy Power, Sir Humphry Rolleston, Sir Arthur Stanley, Sir Harold Stiles, Sir StClair Thomson, Sir Charles and Lady Wakefield, Sir Cuthbert and Lady Wallace, Sir Holburt and Lady Waring, Mr. Henry Wellcome, Sir W. de Courcy Wheeler, Sir William and Lady Hale-White.

A telegram was read from the King, in answer to a congratulatory message from the members of the Assembly. His Majesty replied, thanking them for their good wishes and expressing the hope that their stay in this country might be both interesting and agreeable. A message was also read from the Hon. Frank B. Kellogg, Secretary of State at Washington, expressing his deep interest in the meeting, recognizing as he did "the incalculable benefits which have accrued to the human race through the scientific study and treatment of disease, and the still greater advancement which may be made in medical science through the interchange of views of experienced practitioners." The toasts of "The King" and "The President" were drunk, and to the latter "The Star-spangled Banner" was sung with great fervour.

Mr. NEVILLE CHAMBERLAIN, in proposing the toast of "The Assembly," said that it seemed to him that this adventure or expedition of the members might mark something like an epoch in medical history. There had been other visits of professional men from one country to another, either to increase their knowledge or to spy out the nakedness of the land, but he doubted whether there had ever been an instance of a great body of men leaving their practices for so long a time and crossing the ocean in order to acquaint themselves with the progress of medicine in another land. In these days one discovery of medicine succeeded another with startling rapidity. So many scourges had been brought under control that there would be little left for practitioners to do were it not for the fact that new diseases were discovered at a rate approximately equal to that at which the old diseases were eradicated! The general practitioner had special opportunities for educating the public. The community had awakened, perhaps rather late in the day, to the special dangers which attended the crowding together of great masses of people in large cities, and an elaborate organization of sanitation and inspection had been built up. But it was necessary to enlighten the people as well as to improve their environment, and while he would be the last to undervalue the health propaganda carried on by public authorities he could not help feeling that the most powerful and efficient propaganda must always be that which was directed by the general practitioner. Mr. Chamberlain added that, of course, medicine must be international, and he thought it would become more and more so as the years went on. But it was easiest for those who spoke a common language to exchange ideas, and in that respect he felt that there was a great opportunity before the profession of the English-speaking nations. With the natural advantages they possessed they could lead the world in the great war against disease. Therefore this visit would be treasured by those in England because they saw in it the promise of an even more fruitful and abundant co-operation.

Dr. MAYO said in response that their English kinsfolk did not realize how much had been accomplished by this wonderful reception. One of the most important ideas which the visitors would take back with them was that there existed in Great Britain a Minister of Health. In America they had not got so far, nor, indeed, had they a Minister of Education. The creation of the Ministry of Health was due to the combined effort of the medical profession. In every community the condition of health had advanced just as far as the medical profession was capable of carrying it. He went on to speak of the desirability of having in London a great central post-graduate school, where men from all parts of the world could come and sit at the feet of the leaders of British medicine. As instancing the appetite for instruction among those who had come across with him on this occasion, he mentioned that on the boat they had had no fewer than sixty-five lectures and addresses!

Dr. HUGH CABOT (Professor of Surgery, University of Michigan) proposed the health of the British medical profession. He spoke of the influences upon American medicine, especially on the Atlantic side. American clinicians of the seventies and early eighties were much impressed by the French school. Afterwards came the striking and profound influence of the German school, with its accent on the science as contrasted with the art of medicine. This influenced greatly the trend of medical education in the States. It had led, perhaps, to a tendency to lose sight of the patient in considering the pathological process. They had come now to the turning-point, when the question was whether clinical medicine could hold its own, and it was of great interest and importance that at this juncture they should have come to London, where the greatest clinical school in the world had been built up.

Dr. WOODS HUTCHINSON (ex-President of the American Academy of Medicine), who also spoke to the toast, commented on the change which had taken place in therapeutics. Nowadays he was the best physician who knew the worthlessness of most drugs, and extolled only the six or seven real remedies in materia medica. Formerly it was the fashion for the doctor to prohibit many articles of

food, chiefly those which the patient most fancied, but nowadays these foods had all come back into medical favour on account of the vitamins they contained, or, if they did not contain vitamins, one could be nearly certain that they contained iodine, which was good for the thyroid gland. Dr. Hutchinson was hardly in accord with what had been said about the overworked business man, and the need in later middle life for taking things quietly. When a man got to 60 he could afford to do a little experimentation. The speaker was not in favour of slowing down when a man had done the best part of his work and was waiting for his discharge. On the contrary, the happiest thing to do was to put on full steam, to be adventurous, to take risks, to live to the full, until the lenticular striated artery snapped at the base of the brain. The speaker gave some account of public health on the other side of the Atlantic, and mentioned that Mr. Ford in the salvage department of his factory employed 1,100 consumptives, each of whom earned from six to nine dollars a day, and the Ford works were the most successful sanatorium he knew of anywhere in the world.

Lord DAWSON OF PENN, in a brief response to the toast, spoke of the widening horizons of medicine, the proud inheritance of the English-speaking nations, and the limitless possibilities of achievement in co-operation. The enthusiasm and energy of the visitors had been a continual surprise and delight, and he believed that those who had come seeking knowledge from across the seas had brought to their hosts more than their hosts had been able to give them in return.

Sir W. ARBUTHNOT LANE, in proposing the toast of "The English-speaking Nations," spoke of the hope they had in London of establishing a great teaching centre to which their friends from America and the Dominions would continually come. Sir STCLAIR THOMSON also spoke to the toast in a speech which showed that even twice-told stories can be very delightful. He declared that there was nothing to separate the two greatest English-speaking nations, except ignorance and water. The devotion of the Americans to Shakespeare had struck him—a devotion not always manifest among the people in Shakespeare's own country. Indeed, the desire on the part of many to bring in a visit to Stratford-on-Avon was the only thing which had threatened to disarrange seriously the Assembly programme.

Dr. FRANKLIN H. MARTIN (Director, American College of Surgeons), in his response to the toast, implored the leaders of medicine in this country to set up a system of post-graduate medicine worthy of the capital of Anglo-Saxondom. All that it required was organization. There were facilities in London for teaching medicine and surgery which were second to none. Providence long ages ago refused to allow the Thames and the Seine to flow into the Rhine. Why not see to it that scientific medicine no longer flowed into the Rhine? Clinical facilities in London were largely going to waste. There were wonderful medical schools in London for teaching students about to enter medicine, but the resources that might make London the centre of post-graduate teaching were not being used. It was a humiliation to those of them from the West to have to pass through New York and through London to Berlin and Vienna to receive teaching in a language they did not understand. Was it not possible to have in London a great centre for the post-graduate teaching of medicine?

## THE PILGRIMS' DINNER.

Nothing could be more "fraternal" than the Pilgrims' entertainment of the Inter-State Post-Graduate Assembly of America, at the Hotel Victoria, Northumberland Avenue, on June 4th. The DUKE OF CONNAUGHT, the President, welcomed the guests. He recalled the saying that medicine had now become international, so that the guests were there for an international purpose, and he was certain that they would all feel at home in this country. The Foreign Secretary, Mr. AUSTEN CHAMBERLAIN, made an amusing speech in proposing the health of the American doctors. The toast appeared to him to open so wide a field and to require such extensive knowledge that no one but the Editor of the *Encyclopaedia Britannica* or the Editor of the *British Medical Journal* could be competent to propose it. Mr. Chamberlain said he had not yet recovered from his wonder that, except in Russia and on its boundaries, the great war had not been followed by a plague. No comparable event in the history of the world had left so little trace on the health of communities. This was due to the knowledge which doctors had spread throughout the world. Mr. Chamberlain related a story, told by his father, of someone who did not agree that the climate of India was unhealthy, since, except for measles, smallpox, and three attacks of swamp fever, he had never had a day's sickness in his life! Dr. CHARLES MAYO, in replying to the toast, emphasized the unity of medicine. He felt that more good would develop from the present "invasion" of England by America than, perhaps, from that of any other group that had visited this country. The guests were leading men in their profession wherever they came from: a large proportion were in contact with the people as general practitioners, and on their return home they would disseminate the knowledge they had obtained from the "old home." The great men of England belonged to them because they were themselves from England; they had the same ideas and were of the same stock. On previous occasions the visitors had been mainly specialists. Specialists were a peculiar people whom he would call accumulators. The men who were present, as general practitioners, were distributors; and they had been brought into contact with all that was best in the greatest city in the world. At the end of his speech Dr. Mayo made the Duke of Connaught, Mr. Austen Chamberlain, and Lord Desborough honorary members of the Inter-State Post-Graduate Assembly of America. Sir JOHN BLAND-SUTTON proposed the health of the Chairman, and the DUKE OF CONNAUGHT replied.

## COMPLIMENTARY DINNER TO DR. MAYO.

On the day before the visitors left London for the provinces a complimentary dinner was given to Dr. Charles H. Mayo by the Surgical Section of the Royal Society of Medicine. This took place at the Hotel Cecil, with Mr. HERBERT PATERSON, President of the Section, in the chair. Among others present were Dr. Franklin Martin, Sir StClair Thomson, Mr. J. C. C. Davidson, M.P., the Right Hon. T. P. O'Connor, Sir W. Arbuthnot Lane, Sir Anthony Bowlby, Sir William Macpherson, Sir D'Arcy Power, Sir George Blacker, Dr. H. Cabot, Dr. Woods Hutchinson, Sir James Berry, Mr. H. S. Souttar, and Mr. Swinford Edwards. Many of those present were accompanied by their ladies. Mr. Paterson, in proposing the health of the guest, remarked that Dr. Mayo was the son of an Englishman, as his father was born at Eccles, near Manchester. The success of the Mayo Clinic was due to the combination of the highest professional skill, the consideration of the best interests of the patient, and the most highly organized business methods. He praised alike the versatility and the modest disposition of the guest, and spoke of the value of clinical congresses in cementing the bonds of friendship and good fellowship between the English-speaking peoples. These friendly invasions had become established, and he hoped they would be long continued. Dr. MAYO, in his reply, paid a tribute to his brother, Dr. William James Mayo, and expressed his sense of the compliment paid him by the Surgical Section. Mr. J. C. C. DAVIDSON, M.P., Parliamentary and Financial Secretary to the Admiralty, proposed the toast of "America and American Surgery," to which Dr. FRANKLIN MARTIN replied, and the President of the Royal Society of Medicine (Sir StClair Thomson) and the Chairman had their healths proposed respectively by Sir WILLIAM ARBUTHNOT LANE and Sir JAMES BERRY.

## OTHER FUNCTIONS.

Following upon the morning lectures, the visitors made their way, by a fleet of special motor buses, to the various hospitals where demonstrations of special cases, operations, and lectures by members of the staff formed the usual programme. Garden parties were arranged at the London, St. Thomas's, and St. Bartholomew's Hospitals. The medical staff of the Central London Throat, Nose, and Ear Hospital entertained a party of forty to luncheon at the Carlton Hotel before the hospital was visited.

The evening receptions included one at Lansdowne House, where the guests were received by Mr. H. Gordon Selfridge and Princess Wiasemsky; another by H.E. the American Ambassador, at Crewe House; and a third at the house of the Royal Society of Medicine, when Sir StClair Thomson, President of the Society, with the other officers, received the guests, whose numbers were such as to tax the full resources of No. 1, Wimpole Street, great as they are. It was one of the most brilliant of the series of receptions that the Royal Society of Medicine has organized.

A reception at the Royal College of Surgeons was given in the afternoon, when Sir John Bland-Sutton, the President, gave a short lecture on "The psychology of animals swallowed alive." He showed that the story of Jonah does not stand alone even in human history, while among reptiles and deep-sea fishes swallowing alive appeared to be the order of the day. He exhibited from the College museum some creatures which had been swallowed alive by animals whose digestion was not over-dainty. Some fishes, he said, had stomachs so distensible as to enable them to swallow larger fish than themselves, though the victim sometimes wreaked a fearful *post-mortem* vengeance.

Among other events of the week were receptions by Viscountess Bryce, for the English-speaking Union; by Professor G. M. Gayley, for the American University Union; and by the American Women's Club. The visitors were entertained to lunch by the English-speaking Union, when Sir W. Arbuthnot Lane was in the chair, and by the American Society in London, under the chairmanship of Mr. Wilson Cross. On the invitation of Messrs. Parke, Davis and Co. a party of eighty visited Windsor by motor car and had lunch at the company's laboratories at Hounslow. A party of nearly 300 was received at the Houses of Parliament by Sir Harry Brittain, M.P.

The arrangements for the whole meeting were in the hands of an executive committee under the chairmanship of Sir Humphry Rolleston, and there were a Medical Programme Committee, a Hospitality Committee, and a Ladies' Committee, under the chairmanship of Sir Holburt Waring, Mr. F. E. Powell, and Lady Waring respectively.

# The British Medical Association's Scottish House.

## OPENING CEREMONY.

THE Scottish House of the British Medical Association, which has recently been acquired at 6, Drumsheugh Gardens, Edinburgh,* was on June 4th formally opened by the Right Hon. Sir John Gilmour, M.P., Secretary for Scotland. The ceremony took the form of a luncheon, given by the Scottish Committee of the British Medical Association, which was largely attended by representatives of the medical profession and various bodies connected with it in Edinburgh. Dr. C. E. DOUGLAS, Chairman of the Scottish Committee, presided.

Among those present were the Lord Provost of Edinburgh, Sir William L. Sleigh; Lord Mackenzie, Chairman of the Hospital Services Committee; Dr. R. A. Bolam, Chairman of Council, Dr. H. B. Brackenbury, Chairman of the Representative Body, Mr. N. Bishop Harman, Treasurer, Dr. Alfred Cox, Medical Secretary, and Dr. J. R. Drever, Scottish Medical Secretary, of the British Medical Association; Professor G. Lovell Gulland, President of the Royal College of Physicians, Edinburgh; Professor T. K. Monro, President, Royal Faculty of Physicians and Surgeons, Glasgow; Sir David Wallace, President, Edinburgh Medico-Chirurgical Society; Professor G. M. Robertson, President, Medico-Psychological Association; Dr. A. K. Chalmers, President, Society of Medical Officers of Health; Dr. Drummond Shiels, M.P., President, Royal Medical Society, Edinburgh; and Sir Robert Philip.

*Speech by the Secretary for Scotland.*

Sir JOHN GILMOUR, in declaring the House open, said that those who represented the British Medical Association had applied their minds and energies to bringing healing and light into the community. The Association not only included the country in which they stood but the whole United Kingdom, and the power and influence of the Association was becoming Empire-wide. He was sure he was speaking for His Majesty's Government when he said that they realized very fully indeed the importance of bringing together all well considered opinion upon the increasingly difficult problems with which they were confronted to-day. The British Medical Association had not only banded its members into a great organization, but it had done more in producing a journal which was of great value as a record of medical thought and research. The *British Medical Journal* was a source of great value in post-graduate work to many men who, having become efficient medical practitioners, disappeared into the corners of the earth. They had met that day for a fresh departure in the history of the British Medical Association. He believed that the relationship of their Association and other medical bodies to Government departments, such as the Board of Health for Scotland, had been essentially of a useful nature, and if in any measure during his present tenure of office he could increase the work between them he would feel rewarded. The health and the housing of the people were clamant and difficult problems, which could only be solved if there was a recognition both by Government departments and by medical associations that they must work together for the solution of these difficulties.

Dr. R. A. BOLAM, replying, said that it was a source of satisfaction that the imperial bearing of the Association was recognized in high quarters. He said that in the Council of the Association, over which he presided, there was a corner called the Scottish corner, which sometimes emphasized the truth of the maxim that you could sit on the rose, you could sit on the shamrock, but you could not sit on the thistle. Nevertheless, they always looked to the Scottish corner for sound guidance. He continued that the outlook for the British Medical Association was good, and they hoped within a month to open their new House in London. He had on occasion resented the comment that the Association was a trade union, for he felt that in it there was something infinitely stronger and greater than a trade union, and he believed that their influence with Government departments was now deservedly great, and was an influence for the good of the country. Dr. Bolam then handed over the custody of the House to the keeping of the Scottish Committee.

The CHAIRMAN, in thanking Dr. Bolam and accepting the custody of the House, remarked that during the last five years the Association's membership had increased by nearly 80 per cent. In the course of an admirable speech, Dr. Douglas drew an analogy between the medical profession and the Army. Every man in each of these callings was, he said, in the first place a keen individualist, depending upon his own strength and brain; but just as the soldier would be ineffective without the organization of the Army, so the doctor nowadays would be able to achieve little without the British Medical Association. There were some respects in which it was necessary for the Association to act as a trade union, but he could say without fear of contradiction that nothing that the Association had ever done had been contrary to the public interest.

The toast of "The City of Edinburgh" was proposed by Dr. R. C. BUIST, Dundee, and acknowledged by the Lord Provost, Sir WILLIAM SLEIGH; the toast "Floreat Res Medica" was given by Sir ROBERT PHILIP; and that of "The Chairman" was proposed by Dr. H. B. BRACKENBURY.

* See BRITISH MEDICAL JOURNAL, May 23rd, 1925, p. 980.

British Medical Journal.

SATURDAY, JUNE 13TH, 1925.

## FAR FROM THEIR ENEMIES AND THEIR FRIENDS.

THE medical report of the Cassel Hospital for Functional Nervous Disorders, a summary of which is given at page 1102, merits close attention at the present time, when so much thought and labour is being expended on the types of provision needed for the adequate treatment of the various forms which mental disorder assumes. That there is a serious need for hospitals taking types of case similar to those for which the Cassel Hospital is intended there can be little doubt. The complex and artificial conditions of modern life would seem to be responsible for an increasing tendency to "neurasthenia." The widespread interest in psychotherapy and the growing volume of literature on the subject are indicative of the fact that there really is a social problem requiring solution. Fortunately a cessation from work and isolation from social life are unnecessary measures in many cases of nervous illness; such measures, indeed, are often undesirable, and it is an essential part of the treatment that the patient should remain in active contact with life. There are cases, however, for whom sanatorium treatment is a necessity, and there is little question that by such treatment many patients can be saved from a life of chronic invalidism which renders them not only unproductive themselves, but liable to deplete the energies of those with whom they live; for it has to be recognized that mental illness in any form is more exhausting to the entourage of the patient than any other type of illness.

Fortunately there are now many more facilities for the treatment of the milder forms of mental disorder in persons of the professional and business classes than was formerly the case. The voluntary boarder system has been a great benefit to a certain type of patient, and, as is evident from the report of Dr. T. A. Ross, the medical director, the Cassel Hospital is meeting the needs of patients for whom a mental hospital would be unsuitable. We would emphasize the fact, however, that there is absolutely no provision for the sanatorium treatment within the means of persons belonging to the artisan class who are the subjects of functional nervous illness. Every practitioner has brought home to him the fact that artisans, especially those of the intellectual and ambitious type, are liable to break down with nervous illness, after having struggled to acquire a position of moderate comfort. Very often the collapse occurs at the time when the patient is placed in a position of responsibility which it has been a life's ambition to achieve, and he develops a condition which renders him quite incapable of effective and productive action. In such cases the practitioner is helpless because the sanatoriums to which the patients should be sent, and where, as the Cassel Hospital report shows, they may be greatly benefited, do not exist. In such cases we discover a strong argument for the development of psychiatric clinics. The necessity for provision of this kind is, of course, generally recognized, and Professor Pierre Janet has recently made some interesting comments and suggestions on the subject. He refers to the need of organizing treatment for curable neuropaths whom it is necessary "to transport far from the noise of the city, the turmoil of business, far from tramways and telephones," and, incidentally, far from their families, their enemies, and their friends. He points out that convents formerly furnished such patients with the retreats they needed, and that while these institutions must have engendered some cases of insanity, they prevented and cured many others that would have developed in a life in the outside world. He suggests that perhaps the next century will see the development of lay convents which will serve our successors as temporary asylums for restoring their forces, calming their nerves, and retempering their wills for the struggles of the coming year.

The report includes an interesting discussion of the differential diagnosis between functional and organic disease. Dr. Ross points out that first there is the difficulty of deciding whether organic disease is present; secondly, there is the more specialized difficulty of deciding whether, if present, it is responsible for the symptoms presented by the patient, and if responsible at all, whether in part or altogether. The factors responsible for the production of morbid states of mind are, of course, so complex that it is difficult to assign a predominant part to any one of them in a number of cases. A careful examination of the nervous system, with attention to the diagnostic criteria indicated by Dr. Ross, should in the majority of cases render it impossible to confuse organic disease of the nervous system with a psycho-neurosis. A much more difficult matter, and one which is to be considered in a later report, is to determine in the early stage of a mental disorder the category in which it should be placed. Thus in many cases it is hard to state with precision whether a patient is the subject of a neurosis or of a psychosis such as dementia praecox or paranoia. There are probably no absolute criteria which justify a confident diagnosis in the incipient stages, though the impenetrability, lack of co-operation, reticence, and emotional poverty of the precocious dement, in contrast to the frankness, desire to talk of his case, emotionalism, and dependence of the psycho-neurotic will probably afford diagnostic clues to the experienced psychiatrist. Another difficulty arises from the fact that a typical psycho-neurosis may develop into a severe and incurable psychosis. This is often observed in the obsessional neurosis, which is in any case a form of malady particularly resistant to treatment. Thus a patient who has suffered from obsessions for many years may develop a paranoid psychosis or a profound melancholia with fantastic delusions of unworthiness; still more curiously, and more rarely, a paranoiac with ideas of reference may lose these delusions and develop into a typical hypochondriac. We refer to these facts in order to point out how difficult it is to predict the course or outcome of mental disorder, and to emphasize the importance of submitting cases to treatment before symptoms are fully developed. Not only will this render the possibilities of recovery greater before the disease is confirmed, but it will enable the psychiatrist to study the symptoms of incipient mental disease and thereby to gain better insight into their significance from the prognostic point of view.

It is evident from the three reports which have already been published on the work at the Cassel Hospital that these problems are engaging the attention of the medical staff, and it is much to be desired that further clinics of a similar kind may be developed,

not only for those who are in a position to pay for their nursing and treatment, but others connected with the general hospitals or under the control of the health authorities.

## THE LENGTHENED TRAINING OF THE MIDWIFE.

As the British Medical Association, in its evidence before the Royal Commission on National Health Insurance, has made "an efficient service of registered midwives" one of the conditions for its maternity scheme, the rules for the extended training of midwives recently issued by the Central Midwives Board for England and Wales, and the explanatory memorandum accompanying them, have a special interest for members of the Association at the present moment.

The period of training has been increased from six to twelve months for the previously untrained woman, and from four to six months for the fully trained nurse. This differentiation in the degree of lengthening may be justified on the ground that the trained nurse comes to her midwifery work already drilled in the ritual of surgical cleanliness—that part of the training which calls for intensive and continuous discipline until an instinctive habit is acquired. Possibly this halving of the period of study in favour of the trained nurse marks a stage towards making nursing training an essential preliminary to that of a midwife. The number of cases to be "personally delivered" and nursed remains at twenty as before, and one reason for the Board making no increase has been the very sound one of not encroaching further on the already too scanty material for the training of medical students. The memorandum, however, emphasizes the fact that twenty is to be regarded as the minimum number, and that it is expected that the pupil will deliver more, especially in institutions with a small number of cases, so as to compensate for the less continuous experience and less frequent impressions. Another new proviso is that besides the cases actually delivered, the pupil must be certified as having "witnessed not fewer than ten labours," so that she will have learnt what is expected of her before taking her twenty personal deliveries. The most striking change, however, is that five of those twenty cases must be attended within a hospital, and of the remaining fifteen at least five must be attended in the patient's home, with a corresponding proviso that of the twenty lying-in women to be nursed at least five must be nursed in their own homes. This last-mentioned point in the new rules should appeal particularly to the general practitioner who has to carry out the domiciliary practice of midwifery and work with the midwife, because its object, as stated in the memorandum, is that the pupil may learn "how to apply hospital methods to the more difficult circumstances of the patient's home, how to improvise and make the best of what she finds there," as well as how to discharge other duties that may not come to her notice in hospital, such as "her relations with, and duties to, the local health authority and co-operation with private medical practitioners." Space does not permit us to call attention here to other modifications in the rules, which seem well designed to meet their purpose in training women for the maternity service of the country, but it may be as well to note that the antenatal examination of twenty pregnant women is included in the certificates for admission to examination.

Even a cursory study of these regulations, and particularly of the memorandum, which endeavours to interpret the spirit rather than the letter of the rules, will serve to emphasize the remarkable change that has followed the passing of the Midwives Act of 1902. Save in exceptional instances, the midwives of that period, though attending more than half of the births in the country, were untrained and unsupervised. To this day nearly 20 per cent. of those in independent practice are still of the old order, their names having been placed on the roll because they were *bona fide* in practice at the time the Act was passed. The training meanwhile has advanced by stages from three months—often taken as an apprenticeship to a midwife in practice—to a year's curriculum as set out in these regulations, with service both in a hospital and in the homes of the patients. Experience, however, has shown that it is much easier to turn out trained women than to get them to follow their profession as the Act intended. A large proportion of those taking the training laid down by the Central Midwives Board and passing its examination have no intention of practising as midwives. The qualification is useful to them as maternity nurses, in obtaining positions as health visitors and other appointments; but the work of a midwife is too strenuous, the responsibilities too great, and the prospects and economic return not such as to attract the more educated and highly trained woman. The recognition of her professional status by the Act has been paid for by the midwife by a close supervision of her practice, and by an amount of form-filling and notification-making that must excite the sympathy of her fellow sufferer, the insurance practitioner.

The more difficult problem of distributing the services of these well trained midwives throughout the country so as to make them available wherever required is one that must be solved by the public and the health authorities responsible for the local administration of the Midwives and Maternity and Child Welfare Acts. Although something has been done under these Acts and by voluntary effort, such as the Queen Victoria Jubilee Institute and county nursing associations, only its fringe has been attacked; and until this aspect has been faced and some solution found, the degree of benefit from these regulations that will reach the mothers and infants of the country will be but a fraction of what it ought to be.

## THE INTER-STATE POST-GRADUATE ASSEMBLY.

IT was said many times over during the meeting of the Inter-State Post-Graduate Assembly in London last week (of which we conclude our report at page 1086) that Medicine has no national frontiers. It may have no national frontiers, but very often at congresses in which different nations take part certain linguistic frontiers are very evident, and only a few specially gifted people hold the necessary passports. In a gathering of British and American medical men, however, this barrier does not obtrude itself, and there can be not merely amity but perfect understanding. The numerous lecturers last week never found it necessary to go back on themselves and recast a phrase because they were not addressing an English-speaking audience or to explain an idiom. They must have felt themselves being warmed, too, by the evident quickness of apprehension and appreciativeness of those they addressed. Not often do lecturers have audiences, especially consisting of the citizens of another country, so eager and co-operative.

The visitors were tireless in their search for instruction. In spite of very strenuous mornings, no flagging was permitted in the afternoons. If any hospitals made preparations for visitors and none came—which did happen in at least one instance—it was due to no negligence or disrespect on the part of the Americans, but simply to a breakdown of one item of the arrangements; and when one considers what an enormous amount of organization such a meeting entailed, it is a wonder that more breakdowns did not occur. On the side of the hosts there was an excusable pride in what this old country had to show. They took it as a great compliment that visitors should have come so many days' journey to explore their possessions, intellectual and other. One doctor from California, who had left his home on May 10th and had been three weeks on the journey, told an Englishman that, apart from what he hoped to hear and see on the professional side, he had two great ambitions in visiting this country, and had fulfilled both: one was to go to Stratford-on-Avon and the other to see the Rosetta stone at the British Museum. The reverence which the visitors showed for our traditions and our ancient things was most noteworthy.

The outstanding personality of the Assembly was Dr. Charles Mayo, of the famous clinic at Rochester, Minnesota—a man who dominated any company, though not by any assertiveness on his own part. The one anxiety of Dr. Mayo, who described himself as "the brother of William James Mayo," seemed all through to be to express as often as possible his gratitude for all that had been done for him and his friends. The visitors have certainly left behind them in London, among all with whom they came in contact—and we do not doubt that they will produce the same impression in Edinburgh and the other centres they are visiting—a greater friendliness for their country. Tennyson's lines were quoted at the Guildhall banquet:

> Gigantic daughter of the West,
> We drink to thee across the flood,
> We know thee best, we love thee best,
> For art thou not of English blood?

But this was felt to be not an occasion for grandiloquent protestations of Anglo-American unity, but rather for good fellowship and companionableness. So far as could be told, the visitors represented the general practitioners of all the States from one seaboard to the other. A very large proportion of them came, not from the great cities, but from relatively small communities of the Middle West. What they gathered in the way of fresh instruction will be carried to wider circles through their medical societies, the local units of the American Medical Association, to which three-fourths of them belong. We only hope that their recollections of us will be as kindly as our recollections of them. A permanent result of the visit in this country may be some further approach to the ideal which Dr. Franklin Martin urged at the Guildhall banquet—that of making London the post-graduate centre of the English-speaking world.

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ON Thursday, June 25th, the President will give an evening party at the Royal College of Physicians of London to commemorate the centenary of the opening of the present College building, during the long presidency of Sir Henry Halford, to whose influence it was mainly due that the site at the corner of Trafalgar Square and Pall Mall East was placed at the disposal of the College.

## THE PRESIDENT'S VISIT TO CANADA AND THE UNITED STATES.

MR. J. BASIL HALL, M.Chir., F.R.C.S., President of the British Medical Association, during his recent tour of Canada visited Montreal, Kingston, Peterborough, Toronto, Buffalo, Hamilton, Winnipeg, Ottawa, and the Niagara district. In Toronto he addressed the Academy of Medicine on the overgrowth of modern specialism, and his lecture is described by an officer of the Academy as "one of the most eloquent and inspiring that has been delivered before that body; his visit will undoubtedly strengthen the bonds of sympathy and esteem uniting the British and Canadian Medical Associations." While in Toronto the President also addressed the Ontario Medical Association and the Medical Alumni Association of the University of Toronto. In the United States he has been entertained by the Philadelphia Medical Club, and he addressed the annual meeting of the American Medical Association in Atlantic City. Our contemporary the *Journal of the American Medical Association*, after referring in an editorial article to Mr. Basil Hall's visit to the headquarters of the association in Chicago on May 11th, quotes from his Presidential Address last summer at Bradford, and concludes thus: "At a time when the American medical profession is concerned with similar problems, we are exceptionally fortunate in the visit of a British confrere with a real sympathy for the problems of the general practitioner." Immediately after his return to this country the President, on June 10th, attended a meeting of the Council of the British Medical Association. He was very warmly received, and in the course of a few words spoke of the fine welcome he had met in Canada and in all the other centres he visited. He was, he said, sure that his visit had done good. During the midday recess the members of the Council were entertained to luncheon at the Grand Hotel by the Chairman, whose health was proposed by Dr. Brackenbury. In the course of a brief response Dr. Bolam referred to the great debt the Association owed to many older members, some of whom he was glad to see present; the possibility of acquiring the new house was due to their courage and foresight.

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## MEDICAL EDUCATION IN WALES.

THE progress of medical education in Wales can scarcely fail to be impeded by the decision of a recent meeting of the Court of Governors of the University College of South Wales and Monmouthshire, Cardiff, against the separation of the National School of Medicine from the local college. It is true that the court was by no means fully attended, and that the decision arrived at challenges no less an authority than the Privy Council; nevertheless the decision was made, and the next move seems to rest with the Privy Council. The history of the present unfortunate situation is long and complicated. The beginnings of medical education in Wales date back to 1893, when departments of anatomy and physiology were formed at Cardiff College. In 1909 the Treasury gave a special grant to the medical school, which led to the establishment of a chair of pathology and bacteriology; and in response to a general demand the complete "final" school was brought into being soon after the war. In the meantime the urgent need was felt for the reorganization of the University of Wales itself, and in 1916, at the request of the university and colleges, a Royal Commission on University Education in Wales was appointed, with Lord Haldane as chairman. The university and colleges promised to abide by the decisions of the Government based on the findings of the Commission. In their final report the Commissioners recommended the organization of the medical school as a constituent college

of the university, to be governed under the university by a council and senate of its own. This recommendation has since been endorsed by the Faculty of Medicine, the Council of the University of Wales, and the Privy Council. The Council of the University has drawn up a draft scheme for the constitution of the National School of Medicine as a school of the university, which has been submitted to and approved by the Privy Council, but the local college refuses to accept it. The situation is further complicated by the fact that Cardiff College itself is petitioning the Privy Council for a supplemental charter, which, however, the Lords of the Committee refuse to advise His Majesty to grant till the clauses dealing with the School of Medicine are deleted, since "they are convinced that the only satisfactory solution of the problem is to give the school an independent position under the National University." While the desire of Cardiff College to retain within itself its most powerful faculty is natural and understandable, it is just as clear that this retention is directly against the wishes of the medical faculty and the rest of Wales. Incidentally, the college itself would appear to appreciate that its progeny has outgrown its nest, since, while all professors of other faculties have a seat on the senate of the college, only a limited number of the professors of the medical faculty are accorded this privilege. In other words, the other faculties would seem to fear the numerical power of their medical brothers, which is surely acknowledging that the medical school is sufficiently grown up to move into a house of its own. The School of Medicine receives generous financial support from the whole of Wales because it is a national school; if it is to remain an adjunct of Cardiff College this aid will, there can be little doubt, be withdrawn. On March 25th last Swansea Town Council affirmed its approval of the principle of a national school of medicine, and decided that its contribution to the school should be paid into a suspense account, on the distinct understanding that if the school did not become part of the University of Wales the contribution should be refunded to the borough. It seems likely that the rest of Wales will follow Swansea's lead—no national school, no national contributions—and Cardiff College may be placed in the unpleasant position of having to appeal to a Government which it has flouted for financial support for a school which has been impoverished by its short-sighted policy.

## ENCEPHALITIS PERIAXIALIS

In 1912 Schilder described a curious form of diffuse sclerosis of the brain to which he gave the name of "encephalitis periaxialis diffusa." Isolated records already existed of cases in which a similar pathological picture had been found, and since the publication of Schilder's paper between twenty and thirty cases of the same sort have been described, chiefly by German writers. A summary of the literature, together with descriptions of new cases, is contained in two articles in *Brain* (1924, Part IV)—one by Professor L. Bouman of Amsterdam, and the other by Drs. James Collier and J. G. Greenfield of the National Hospital for the Paralysed and Epileptic, Queen Square, London. The pathological appearances are remarkable and quite distinctive, but an altogether new interest has been added to the subject by the fact that a fairly constant clinical picture can now be associated with the disease, since Dr. Collier demonstrated one of his cases during life as an example of Schilder's disease. He was led to make the diagnosis by the clinical resemblance which the case bore to one he had observed in 1902 in the wards of the late Dr. Beevor at the Queen Square Hospital; this case presented pathological appearances characteristic of the condition described ten years later by Schilder. The subjects of this disease are for the most part children or young adults, and no predisposing factors have been noted. The onset is fairly abrupt, and the earliest symptoms are usually disturbances of vision of a kind suggestive of a lesion in the occipital region of the brain. Most of the patients complain simply of a rapid failure of vision, but in a few the loss of vision has been preceded by visual hallucinations, inability to estimate distances, or other signs of visual disorientation. It may be found on examination that the loss of visual acuity affects equally the whole of the visual fields, or that homonymous hemianopia is present; in one of Schilder's cases the blindness affected at first the lower half of each field, corresponding to a lesion in the upper part of each occipital lobe. The pupils continue to show the normal reflex contraction to light—an important sign that the blindness is occipital in origin. A mild degree of optic neuritis has been found in several cases, and has led to the diagnosis of intracranial tumour; its occurrence adds considerably to the difficulty of diagnosis, but the fact that it remains stationary or passes off altogether while other symptoms advance rapidly is a strong argument against the presence of a tumour. Along with the loss of vision there is usually headache and in some cases vomiting. In typical cases the earlier symptoms are followed more or less rapidly by evidences of involvement of the parietal, temporal, and finally frontal regions of the brain. Anaesthesia of cortical type in the form of astereognosis, and unsteadiness of gait from loss of sense of position, may be succeeded or accompanied by progressive deafness. Sooner or later in all cases spastic paralysis develops in the limbs of one or both sides; the legs are usually first affected, and the development of an extensor plantar response is an early sign in most cases. Epileptiform fits are a common symptom, and may occur early. Some degree of progressive mental deterioration is invariable, and may set in early, leading in most cases to a condition of complete dementia. The duration of the illness averaged in seventeen cases ten and a half months, the extreme limits being forty-one days and thirty-six months; in one case recorded by Marie there was, however, an almost complete remission for nine years. In a minority of the cases the order of occurrence of the symptoms is not typical, and visual disturbance may be wholly absent; here the main features are spastic paralysis, fits, and mental changes, and it is difficult to see how the diagnosis could be made with any degree of certainty. The Wassermann reaction was positive in one case only, and the only abnormalities recorded in the cerebro-spinal fluid have been an increase of albumin and a slight excess of lymphocytes. There is usually no fever throughout the illness. The appearance of the brain after death is quite unlike that seen in any other affection. Almost the whole of the white matter of both hemispheres is converted into a pale brown translucent substance of firm consistency, the condition being typically most advanced in the occipital region. In the cases in which vision was unaffected the lesions in the brain corresponded in position with the symptoms present during life, and the occipital lobes were relatively intact. The spread of the disease forwards from the occipital region corresponds with the march of the symptoms, and the frontal area, the basal ganglia, and the brain stem are usually affected late or in slight degree. The cortical grey matter and the arcuate bands of nerve fibres immediately below the cortex are either spared entirely or affected to a moderate degree late in the disease. This fact seems to point to the conclusion that the white matter is affected by some noxious substance, possibly organismal, brought to it by the blood vessels, since the cortex and arcuate fibres receive their blood supply from the surface of the brain, and not from the deep vessels which supply the white matter. The microscopical picture is characterized by an extensive destruction of the myelin sheaths of the nerve fibres in the

white matter, while the axis-cylinders remain more or less intact till the later stages of the disease, when they also are destroyed. In addition there is a widespread overgrowth of neuroglial fibrils, and a general infiltration of the white matter, especially around the blood vessels, with cells of various types. Many of these are round cells resembling lymphocytes, but there are also present compound granular corpuscles concerned in the removal of the myelin, and in addition groups of giant cells of a character probably peculiar to this disease. The histological appearances, especially the preservation of the axis-cylinders which gave rise to the name proposed by Schilder, are somewhat similar to those of disseminated sclerosis, but the distribution of the lesions and the clinical features of the illness are totally unlike that disease.

## THE ACTION OF GOLD SALTS IN EXPERIMENTAL TUBERCULOSIS.

PROFESSOR OLUF BANG, who has been investigating the action of such gold salts as sanocrysin, contributed to the journal of the Danish Medical Association, *Ugeskrift for Laeger*, for May 14th an account of recent experiments, which appear to show that these gold salts have no bactericidal action *in vitro* even in strong solutions, and are of no value in experimental tuberculosis in rabbits. The salts tested were sodium aurothiosulphate and sodium aurichloride; it is stated that the former was subsequently found to be identical with sanocrysin. Early in October, 1924, to each of eight rabbits was given an intravenous injection of tubercle bacilli of bovine origin, followed in six animals by the administration of gold salts, the other two serving as controls. One of the rabbits treated with sodium aurichloride and one of the controls survived the infection, and there was no evidence that the intravenous injection of gold had been beneficial. In a second series of tests nine rabbits were infected with bovine tubercle bacilli by the intravenous route and eight subcutaneously; four of the seventeen served as controls. The gold was given by intravenous injection immediately or five days after infection. The treatment had no effect on the disease, and of the animals infected by intravenous injection the controls lived longest. A curious observation was made in the case of a rabbit given a second injection of sodium aurichloride: as this was proceeding the rabbit suddenly became very restless and seemed to be dying. The injection of gold was discontinued, and 1 c.cm. of Moellgaard's serum was injected, when the rabbit revived at once. Later on it again began to look ill, but a second dose of serum had a similar revivifying effect, and next day the rabbit was perfectly well. It was found that the preparation of sodium aurichloride given on this occasion was more acid than those previously used. Next day the same solution of sodium aurichloride was injected into a rabbit in which the absence of tuberculosis was subsequently determined after death. This rabbit collapsed immediately, but recovered after an injection of serum. Professor Bang suggests that the action of serum in cases of shock caused by sodium aurichloride is unconnected with tuberculosis, and he is very sceptical about the theory that Moellgaard's serum prevents shock in tuberculous animals by neutralizing tuberculin supposed to have been set free by the action of sanocrysin on tubercle bacilli. In a third series of tests the dosage and virulence of the injected tubercle bacilli were reduced, and sanocrysin was administered before as well as after the experimental infection. But the four rabbits thus treated fared no better than the two controls. In a fourth series of tests seven rabbits were used, and only a few tubercle bacilli were introduced by the intravenous injection of an emulsion of tuberculous tissue. Only two of the rabbits were dead at the time of writing, but in this series also there was no evidence to indicate that the gold treatment had a beneficial effect. After describing experiments with gold salts *in vitro*, Professor Bang states that sodium aurothiosulphate (Gjaldbaek) does not interfere with the growth of tubercle bacilli in a 1 in 2,000 solution, and sanocrysin (Moellgaard) does not do so in a 1 in 3,200 solution. As for the alleged bactericidal action of sanocrysin on tubercle bacilli, Professor Bang describes a test indicating that sanocrysin in a 1 per cent. solution at a temperature of 38° C. fails to kill tubercle bacilli in the course of eleven days. He concludes that the gold salts investigated have no specific action on tubercle bacilli, and that any curative action resulting from the use of sanocrysin in human tuberculosis must depend on other factors. Professor Moellgaard has answered Professor Bang's criticisms in a long letter published in *Ugeskrift for Laeger* for May 21st. His points may thus be summarized. Tests *in vitro* of the bactericidal and growth-inhibiting actions of a chemotherapeutic remedy are valueless, as chemotherapy is not internal antisepsis, witness the inability of such drugs as atoxyl, salvarsan, and Bayer 205 to kill in a test tube in a dilute solution the germs which they destroy *in vivo*. The shock observed by Bang in the case of the rabbit which recovered when given serum was a pure drug shock, such as may follow the administration of salvarsan, and has nothing to do with toxin shock following the injection of a chemotherapeutic remedy in a highly infected animal. Bang's method of infection with pus does not ensure a uniform dose of tubercle bacilli, and may entail a mixed instead of a pure experimental infection. The sodium aurothiosulphate prepared by Gjaldbaek is not necessarily identical with sanocrysin, and negative experiments with the former do not, therefore, at once invalidate the claims made on behalf of the latter. Bang's tests *in vivo* with sanocrysin itself were limited to six rabbits, none of which was treated with serum, and it is doubtful whether the optimum dosage was given; and even if sanocrysin proves to be ineffective in the experimental tuberculosis of rabbits, it does not necessarily follow that it is ineffective in the tuberculosis of other animals and man. Moellgaard concludes with the generalization that as great reserve and caution should be practised in the publication of negative findings and destructive criticism as in that of positive findings and therapeutic claims; and he does not admit that Bang's work on rabbits has upset the observations and conclusions based on four years of conscientious experimental work.

## SWINE ERYSIPELAS AND MAN.

ONE of the most widespread porcine diseases in this country is the so-called swine erysipelas. Unlike swine fever, it is not a notifiable disease; but although exact statistics are not at present available, there can be no doubt that it is a very serious source of loss to pig-breeders. Its importance is intensified by the fact that the causal organism is capable of attacking human beings. It is a Gram-positive, facultative anaerobic, immobile bacillus, morphologically identical with the bacillus of mouse septicaemia. It is non-sporulating, but nevertheless has very considerable powers of resistance, and apparently can exist as a saprophyte in the soil. In pigs acute and chronic forms of the disease are encountered. In the acute form there is fever, purplish discoloration of the skin, and haemorrhagic visceral lesions; while in the chronic type, in addition to the skin coloration, there are frequently seen arthritis and a verrucose endocarditis—the vegetations containing immense numbers of the bacillus. A serum obtained from the horse with or without a vaccine has been successfully used in the prevention of the disease; the serum has also been used for treatment. In man the lesions of the heart are unknown;

and in general the disease runs a much more benign course than in pigs. Many cases have been reported at one time or another. Cameron[1] recently referred to a case in one of the inspectors of the Ministry of Agriculture; while Cotoni[2] and Cauchemez[3] have recently described the symptoms as seen in themselves. Numerous other cases have been reported in Germany. All the cases in man have been traced to direct inoculation from a porcine source. In the pig infection is generally by ingestion. The symptoms vary, but usually a slightly painful erythema is observed within forty-eight hours of infection. The swelling extends up the arm—the primary lesions in all recorded instances have been on the fingers—and there is a more or less generalized lymphangitis of the extremity; for some days the patient suffers from a low fever and general malaise and fatigue. In some instances cure has been spontaneous; in others a subcutaneous injection of antiserum has materially assisted the cure—in Cauchemez's own case the swelling disappeared within seven hours after the injection and the subsequent recovery was rapid. In addition to its transmissibility to man, the disease is of considerable economic importance. It is apparently reaching epizoötic proportions in some parts of England this year, and is causing great losses. If energetic measures are adopted by the Ministry of Agriculture, there should be a considerable improvement in the situation and a diminution in the probability of human infection.

## THE ROYAL FREE HOSPITAL.

THE Royal Free Hospital, in Gray's Inn Road, is, we believe, the only hospital in Great Britain which enjoys the specific distinction of being the hospital of a medical school for women. It was the consent of the managers and staff of the hospital to occupy the position which made possible the London School of Medicine for Women, and during the forty or more years the connexion has existed there has grown up a strong feeling of loyalty among the old students of the school. The dean of the school, Dame Aldrich-Blake, M.D., in responding to the toast of "The Hospital" at a festival dinner given on Tuesday evening at the Guildhall, London, dwelt on this point, and said that in this way the fame and name of the hospital was carried into every corner of the British Empire. The toast had been given by Mr. J. H. Thomas, M.P., who, beginning in a humorous vein, went on to make a really eloquent appeal, during which he recalled that the hospital had been founded by Dr. William Marsden in 1828, and moved to its present site in 1840. While there was, he said, difference of opinion as to whether hospitals should be supported by voluntary contributions or by the State, there was no difference of opinion that the hospital work must go on. Lord Riddell, who was in the chair, and who is president of the hospital, said that at the present time it almost seemed that any hospital desiring to raise money must either be falling down, or about to close a number of wards, or have a substantial overdraft. The Royal Free Hospital was not falling down, nor were any of its wards to be closed; on the contrary, a special appeal was made for £50,000 to build a ward for children. It had, however, a substantial bank overdraft. Since its foundation the hospital had treated four million patients, and during all the ninety-eight years of its existence had been able to command the support of generous benefactors, among whom at the present day very special thanks were due to Mr. Alfred Langton, one of the hospital's greatest friends. Lord Riddell was very warmly received, as was his reference to Mr. Langton. The toast of "The Guests" was given by Dr. Walter Carr, consulting physician to the hospital, and acknowledged by Lord Jessel, formerly M.P. for St. Pancras, and Mr. C. T. Cramp, general secretary of the National Union of Railwaymen. Sir Charles Wakefield, an alderman of the City of London, and formerly Lord Mayor of London, proposed "The Medical Profession"; this was acknowledged by Sir Humphry Rolleston, Bart., President of the Royal College of Physicians, and Sir Squire Sprigge, M.D. It was announced that subscriptions amounting to £21,250, including a gift of £5,000 from Mr. Alfred Langton, had been received in connexion with the festival dinner, and Lord Riddell said that he would make the amount up to £25,000. We fervently hope that the whole amount required will shortly be received, for it seems to us something of an anachronism that the hospital of a medical school, especially perhaps a medical school for women, should lack children's wards.

## HEALTH AND THE LEAGUE OF NATIONS.

IN a brief foreword to his little volume *What the League of Nations Is*,[1] Mr. Wilson Harris explains that no such publication already exists in small compass and at a reasonable figure. Everyone doubtless thinks he knows a good deal about the League, but after perusal of this admirable work he will find that concise and specific knowledge has displaced his vague acquaintance with the subject. The chapter that particularly interests a medical reader is devoted to the world's health. Article XXIII of the Covenant requires that the League shall "take steps in matters of international concern for the prevention and control of disease." Its organization for that, as for some other purposes, consists of a Health Advisory Council, a Health Committee, and a Health Section of the Secretariat, the Committee being the chief agency. Having neither personnel nor funds for large activities, its main function is to co-ordinate and direct national effort, though at the very beginning it had to participate actively in the campaign against typhus in Eastern Europe. For that special purpose voluntary contributions by Governments provided a fund of about £200,000, so that doctors, hospitals, and drugs were supplied for the emergency at the same time that the countries concerned had the benefit of an object lesson in the prevention and control of disease. Also, an office has had to be established as far away as Singapore to fight the origins of disease in the Far East, under direction from Geneva. Uniformity of standards in the use of medical terms and in the production of serums is manifestly of international importance, and for this the State Laboratory at Copenhagen has been made responsible under the scheme of the League. The same remarks apply to vital statistics and statistical methods. Cancer, malaria, sleeping sickness, and tuberculosis are subjects of study. Thanks to funds provided by the Rockefeller Foundation, health officials of different countries have been organized into parties of twenty or thirty, to receive a two or three months' course of instruction in the administration of selected countries, including Great Britain. An example of other activities is to be found in the inoculation against typhus of half a million refugees pouring into Greece from Asia Minor after the Turkish victory over the army of Greece. Infectious diseases pay no heed to national boundaries, and the League endeavours to establish a system of mutual protection. In the other chapters of his book Mr. Wilson Harris deals with such subjects as the Court of International Justice, the armaments problem, the reconstruction of Europe, the Saar and Danzig, and the protection of the rights of small nations.

[1] Cameron: *Proc. Roy. Soc. Med.* (Comp. Med.), 1924, pp. 31-36.
[2] Cotoni: *Ann. Inst. Pasteur*, 1919, pp. 634-645.
[3] Cauchemez: *Rec. Méd. Vét.*, 1925, pp. 172-174

[1] *What the League of Nations Is.* By H. Wilson Harris, M.A. London: George Allen and Unwin, Ltd. 1925. (Cr. 8vo, pp. 128 3s. 6d. net.)

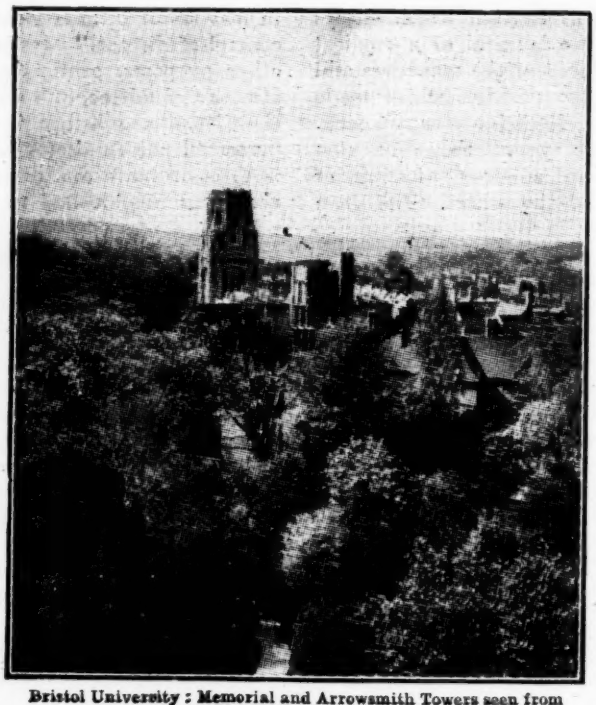
# UNIVERSITY OF BRISTOL.

## ROYAL OPENING OF THE NEW BUILDINGS.

ON Tuesday, June 9th, the King and Queen visited Bristol to open the new buildings of the University provided by the munificence of the Wills family. Bristol is the youngest of the English universities, for its charter dates only from 1909. When members of the British Medical Association visit the sister city of Bath next month they will have an opportunity of inspecting the University.

### ORIGINS OF THE UNIVERSITY.

In anticipation of this important event Professor J. A. Nixon, C.M.G., M.D., has contributed to the *Bristol Medico-Chirurgical Journal* an article, with illustrations, on the past and present of the University, with special reference to the Bristol Medical School. Higher learning, he says, met with no encouragement in Bristol until the decay of the Barber Surgeons' Company early in the eighteenth century stimulated some of the infirmary staff to give anatomical and other lectures to their surgical pupils. In 1816 Dr. J. C. Prichard conceived the project of founding a medical school in connexion with the infirmary. By 1830 various independent courses of lectures had been combined to form two recognized medical schools—the School of Anatomy and Medicine and the Bristol Medical and Surgical School. In 1833 these were amalgamated to form the Bristol Medical School. When the University College was founded in 1877 some of the lecturers in the Medical School advocated complete incorporation of the new school with the College, but this proposal was defeated and the Medical School remained autonomous until 1892, when it was incorporated in the College. When seventeen years later King Edward VII granted a charter to found the University of Bristol by merging University College and the Merchant Venturers' Technical College, the incorporation of the Medical School in the new university was not even then made complete. At length, in 1922, the whole medical curriculum came under University management.



Bristol University: Memorial and Arrowsmith Towers seen from Physics Laboratory.

"Thus the Bristol Medical School with its long and honourable tradition continues as one of the most vigorous faculties in the university to whose foundation it had so actively contributed, even if at times it has dissembled its filial affection and pride by a certain degree of independence."

Professor Nixon follows this historical note with a brief review of the opportunities and advantages which the medical student can enjoy to-day in Bristol. The departments of chemistry, biology, physics, anatomy, physiology, and pathology are splendidly equipped. As for the departments of medicine, surgery, obstetrics, ophthalmology, otology, and laryngology, although these find scanty accommodation in the University buildings, "they can spread their wings wider and more freely in the great hospitals of the city." In the new buildings, however, there is a fine Medical Library, containing collections of books which formed the separate libraries of the Royal Infirmary, the General Hospital, the Bristol Medico-Chirurgical Society, and University College.

In conclusion Professor Nixon points out the advantages offered by Bristol in the provision of halls of residence for undergraduates. Students who do not live at home are no longer compelled to find isolated and ill furnished lodgings. "The University of Bristol has from the outset aimed at being a residential university, and in the short space of sixteen years has succeeded in laying the foundation of true collegiate life for both men and women students."

### THE NEW UNIVERSITY BUILDINGS.

The new buildings, occupying the Queen's Road frontage of the central university site, are the gift of Sir George A. Wills and of his brother, the late Henry Herbert Wills, who died three years ago. The buildings constitute a memorial to the donors' father, Henry Overton Wills, founder of the University and its first Chancellor. Built of stone in Gothic style, they are surmounted by an imposing Memorial Tower, of which some idea may be gained from the illustrations on this page. This tower, 215 feet in height, which dominates the sky-line of Park Street and overlooks the spires and cupolas of mediaeval and eighteenth century Bristol, contains a lofty entrance hall with fan-vaulted roof and double flight of stone stairs; a striking feature of the interior is the founder's window. The entrance hall gives access to the Great Hall, a splendid chamber with carved oak panelling and hammer-beam roof, and an apse of fine proportions.

Other features of the new building are the Council Chamber, the administrative offices of the University, and the new premises set apart for the Faculty of Arts. It accommodates also two important libraries in a separate wing—the large general library, with its remarkable barrel roof, and the medical library referred to above.

The architect, Sir George Oatley—as is justly observed in a sumptuous book of the University of Bristol, published for the occasion[1]—has followed the Gothic precedent of previous builders: a choice of style justified by the peculiar adaptability of a Gothic building to complex requirements on a somewhat crowded site. His work, however, shows no servile reproduction of fifteenth century forms. The Memorial Tower with its belfry—original in the solution of the old problem how to set an octagon upon a square without leaving awkward corners—gives cohesion to the imposing mass of the exterior. Throughout the new buildings the balance of severity and ornament is carefully observed, both in masonry and in woodwork.

Within the octagonal belfry hangs a great bell weighing nearly 10 tons, and bearing an inscription from the Vulgate (Rev. vii, 12).

When, more than a year ago, we had an opportunity of inspecting this great work in progress, with the architect as guide, the idea came over us, as we climbed dizzy heights and scrambled among masses of stonework and forests of

[1] *University of Bristol, 1925.* Bristol: J. W. Arrowsmith, Ltd.

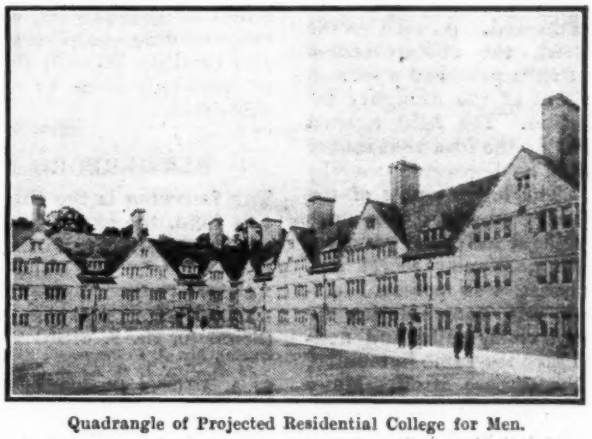
beams, that we were back in the days of mediaeval craftsmanship. Masons and carpenters one and all seemed to be working as their forefathers worked, each fashioning his piece of the fabric as though the success or failure of the whole turned on how he did the job that lay to his hand. The impression that remained was that the artificers of Bristol, conscious of their heritage, had entered into the spirit of the thing. This, as the younger generation would say, must be counted as one up to the architect, who, with boundless resources at his command—for where there are Wills there are ways—has risen to the height of a wonderful opportunity.

### Halls of Residence.

A large proportion of Bristol students are drawn from the towns and villages of the West and South-West of England, and the aim of the University from the first has been to give such students, and any others who wish for them, the unquestioned advantages of a residential system, thus providing the means of a true corporate life. The authorities recognize how much is to be gained from the influence of a large nucleus of resident students, suitably housed and organized, on the spirit of the University as a whole.

The women students of the University have been fortunate from the outset; a private benefaction enabled the University to purchase and equip for their reception the delightful property of Clifton Hill House. To this has been added the adjoining premises of Callander House and grounds, and another mansion near at hand known as the Manor House. Besides these there are four smaller halls of residence for women.

For the reception of male students Canynge Hall and Mortimer House were instituted in 1919 and 1922. A further and most important step on this side of University development is the projected establishment of a new residential college for men on an estate of twenty-five acres across the Clifton Downs, not far from the University athletic grounds. This estate was the last gift in his lifetime of H. H. Wills, and the buildings are to be given by Sir George Wills in memory of his brother. The plans, as our reproduction of the architect's drawing shows, are already prepared; they foreshadow a complete scheme of collegiate life, such as is practicable only where buildings are originally designed for the purpose. Thus Bristol, thanks to its benefactors, will be able to provide for its undergraduates a full residential college life, such as hitherto has been the peculiar asset of the ancient universities.



Quadrangle of Projected Residential College for Men.

### The Opening Ceremony.

When the King and Queen arrived at Temple Meads, Bristol, at noon on Tuesday they were met by the High Steward of Bristol, the Duke of Beaufort, and Lord Beauchamp, Lord Lieutenant of Gloucestershire, who presented the Lord Mayor and other officials to the King. Their Majesties, accompanied by Lord Eustace Percy, President of the Board of Education, then drove through cheering crowds to the Council House, where the Corporation presented an address of welcome. In his reply the King said that the advance of education was a traditional virtue in Bristol, and that the merchants of the sixteenth century and afterwards who made the city famous in exploration and trade were also great founders of schools. At one time it had been thought that a university town was the seat of a university and nothing else, but it had been the most characteristic feature in the modern development of higher education that new universities had been founded in busy and populous centres. This was in the best interests of both learning and business, for the interaction of the two was stimulating to each.

After luncheon their Majesties proceeded to the University, where the University procession was formed and entered the Great Hall, headed by the architect and contractor and representatives of the workmen. The Chancellor of the University, Lord Haldane, presented an address, in the course of which it was said that "It is our happy lot and duty to cultivate and encourage learning both by imparting knowledge to those who seek it, and not less by providing facilities for its development through maturer study and research." It was the part of a university to unite in a common life and inspire with a single ideal persons whose fortunes had been unequal. The University was conscious also that it was incumbent upon it to bring science to the aid of industry, and in that region particularly to the aid of the ancient and fundamental industry of agriculture, in which their Majesties had shown so keen and so expert an interest.

The King, in his reply, said it gave him great pleasure to open the magnificent buildings which had been erected in memory of the first Chancellor by his sons, one of whom, to the deep regret of all, had not lived to see the completion of a work to which he had devoted, not only wealth, but many years of thought and care. He had, however, left an inspiring example of devotion to a high ideal. The lofty ideals of the University which had been outlined in the address united the youngest and the oldest of our universities in an undivided fellowship of national service. "To hold in trust," the King said, "for the common use the treasures of past thought; to provide for the creative minds of the present a congenial and stimulating home; to give to all the opportunity of a liberal education in the arts and sciences; to animate men and women with worthy ideals of clear thinking and social usefulness; to spread the pure light of disinterested studies over an ever-widening circle—these are some of the essential and ennobling duties of the universities. Their responsibilities are heavy as their opportunities are great; and they can only rise to the full measure of their task if they be strong in public sympathy and support. I am, therefore, glad to hear that, not only the city of Bristol, but also neighbouring counties and important cities, are giving practical proof of a firm belief in the value of the work of this University, and evincing a determination to help in the extension of that work to ever higher levels of achievement."

An address was then presented by the Master of the Society of Merchant Venturers. The King, in reply, said that the society had a striking history, in which the names of Colston and Whitson were proof that the great merchants of the past had a just appreciation of the value of knowledge. The schools of Colston's foundation were still flourishing, but when the educational system of Bristol grew in directions Colston would never have foreseen the Merchant Venturers showed themselves faithful to their old traditions in the new circumstances. The facilities provided in their Technical College were freely used, and the part the society had taken in founding the University of Bristol was fully appreciated. Recent and happy experience showed that the society's old traditions of munificence were not extinct, and that there were still families in Bristol ready to emulate the generosity of earlier benefactors.

The King then, at the invitation of the Chancellor, declared "the University building open as a memorial to the founder for the uses of university education for ever." When the Royal party had made a tour of the building the procession re-formed and passed through cheering crowds to the station.

## RESEARCH DEFENCE SOCIETY.

### ANNUAL MEETING.

THE annual meeting of the Research Defence Society was held on June 9th under the presidency of Lord LAMINGTON. The report showed that during the past year the society had had relatively a peaceful time, though a good deal of work had been done to educate the public in the need for vaccination against small-pox. Dr. G. P. Crowden had been appointed honorary secretary (in place of Dr. Harris, who had resigned owing to the increasing calls on his time), and Dr. A. Salter, M.P., parliamentary honorary secretary. The financial report, submitted by Sir DAVID FERRIER, showed a diminution both in income and expenditure. The income from subscriptions and donations amounted to little more than £70.

*Our Defences against Small-pox.*

Dr. R. A. LYSTER (M.O.H. Hampshire) gave a lecture on our defences against small-pox. He said that generally in the campaign against those diseases which had a frightening effect on the public it was not difficult to make headway, but in the case of small-pox and venereal disease, owing to special circumstances, difficulties arose. Both were loathsome diseases, the secret of both of them was known, they were diseases easily prevented and easily exterminated, and yet both continued to exist, thanks to powerful influences against the effective employment of the measures which medical science had at its command. As soon as the secret of small-pox was discovered, the antiprevention crusade began, and a Dean of St. Paul's preached a sermon to prove that small-pox was an agent of the Almighty for keeping down the surplus population. The fight against disease had been constantly hindered by the idea that sooner or later some universal panacea would be discovered whereby disease itself would be abolished. The biggest unit of the antivaccination army believed that sanitation was such a panacea. But there would never be a universal panacea, because every disease had its own particular secret and key. The secret of venereal disease was personal disinfection; the secret of small-pox was immunization by vaccination—that is to say, an extremely mild and non-infectious form of the disease could give the same immunity, or approximately the same, as the disease itself. Many diseases—rabies, tetanus, diphtheria, enteric fever, among others—were combated by the production of immunity, and the triumphs in these cases were as noteworthy as in small-pox. Apart from the possession of the vital secret with regard to any diseases, only general measures could be taken, and these, while useful enough, might be of no avail in an epidemic.

Recently, in the *Times*, Mr. George Bernard Shaw had disputed the assertion that before vaccination small-pox was almost universal. It was true that there were no general official records, but local records did exist which upset Mr. Shaw's conclusion. In Kilmarnock from 1728 to 1764 the average population was 4,000, and 16 per cent. of all the deaths were due to small-pox; the average age of the small-pox patients at death was 2½ years, and only 3 of the deaths were of persons over 20. At Chester a census was taken in 1775, when the population was 15,000, and only 1,060 of the persons alive in that year had not had small-pox. At Ware in 1772, in a population of 2,515, only 302 had not had small-pox. In the eighteenth century there was evidence that many parents in their panic deliberately inoculated themselves or their children from mild cases. Recently vaccinated persons were exempt from small-pox. Every epidemic told the same story. In the Nottingham epidemic of 1921-22 no vaccinated child took the disease. In the recent epidemic at Toronto no case of small-pox occurred among persons who had been vaccinated during the previous twelve years; there were no deaths at all in that epidemic among persons who had ever been vaccinated, whereas 71 per cent. of the unvaccinated cases died. He cited similar figures for the Gloucester epidemic of 1895 and the Poplar epidemic of 1922. With regard to the Gloucester epidemic, he quoted the report of Dr. John Campbell, the medical officer of health for that city at the time, to the effect that the disease raged at its worst in the area which was the most recently built and the least densely populated—a fact which contradicted recent assertions. Dr. Lyster confessed himself baffled in his efforts to discover the scientific position of the anti-vaccinationist agitation. The propagandists on that side appeared to take refuge in a series of denials of scientific facts, and themselves brought forward alleged facts which lacked the necessary precision to permit of their being verified. Moreover, antivaccinationists contradicted one another; one party said that the almost universal incidence of small-pox in the eighteenth century was a myth, another party admitted its existence but said that it was due to bad sanitation. He himself had no quarrel with anti-vaccinationists on any other than the scientific ground. He gave them credit for high ideals and a desire for the public benefit. He asked only that they should give him similar credit. And he would like to see how far the anti-vaccinationists were prepared to prove the faith that was in them. Any medical school on the vaccination side would provide two dozen volunteers who, having been efficiently vaccinated, would welcome the opportunity of being brought into intimate contact with a number of typical and fairly severe small-pox cases. Was the anti-vaccinationist brigade prepared to put up a similar number of enthusiasts? Let them employ whatever prophylactic other than vaccination they chose, and then let them attend on small-pox cases, and let some independent body judge the results. The experiment might have interesting scientific consequences, and might even go far to settle this long-standing controversy. It was time that the bitterness and hostility between the two camps came to an end, and it could only do so by a scientific test to which both sides submitted.

## RUTHERFORD MORISON TESTIMONIAL.

THE following is the third and final list of subscriptions to this fund, the grand total of which, including subscriptions promised, amounts to £1,528.

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*10s.*—Dr. Williams (Haltwhistle), Dr. E. F. Dawson Walker (Durham).

*Subscriptions Promised, but Amounts Not Specified.*—Dr. Sally Allen (Newcastle), Dr. S. K. Norris (Meadowfield), Drs. J. and G. Denholm (Meadowfield).

# Nova et Vetera.

## AN EARLY VICTORIAN MEDICAL JOURNAL.

PRACTICE and domestic medicine in 1837 were necessarily more primitive than now, but we should hardly have imagined them to be as nearly mediaeval as appears from the perusal of an old medical magazine, of which the first number appeared in the year of Queen Victoria's accession. This journal is "The New Doctor, a Medical, Philosophical, and Literary Magazine, and Family Journal of Health: containing New Views in the Prevention and Treatment of All Disorders and Diseases familiarly described, and adapted to All Classes of Society." It was published with rude but spirited woodcuts by Steill of Paternoster Row, and the editor was G—— S——, M.R.C.S., lecturer on midwifery and the diseases of women and children, author of a *Treatise on the Disorders of the Digestive Organs*, surgeon to two most respectable charities, consulting surgeon to the St. John's Midwifery Institution, and honorary member of the Medical Society of St. Bartholomew's Hospital. This does not exhaust the catalogue of the New Doctor's qualifications, but it bears eloquent witness to his respectability in the profession. And this, from the modern point of view, is the more remarkable, for he is emphatically what would be now regarded as an advertising quack: he sells pills and plaisters named after himself, and takes half-crown fees from patients whose ailments mostly require anonymity.

We suppress the surname of the New Doctor, since it still survives honourably in the provinces and has been known in both medical and lay literature. The fact that the New Doctor could apparently proceed in his methods unchallenged and unrebuked marks the extreme difference between the medical ethics of two epochs.

Almost the first article in the magazine we are considering—for the first item is a picture of a skeleton—bears the curious title "Sedative Effects of the Spider's Web." It is the case of "an intelligent young man (in private practice), who after consuming three quarts of brandy in thirty-six hours, fell into a state of temulent excitation, so excessive that he was incapable of keeping a recumbent or even a sitting posture for more than a minute, but paced his chamber with a ceaseless step for two days and nights." He was not delirious, says the record, but vehement in his hurried talk, and haunted by visionary monsters. After taking quantities of opium he felt no relief till the New Doctor, on the morning of the third day after the drinking bout, began to administer *fresh* spider's web in pills of five grains every hour. The patient found great relief, and cobweb, the New Doctor opines, is the sovran remedy in cases of alcoholic excess. Once famous as a febrifuge, especially in Latin countries, cobweb is not now found in pharmacopoeias.

The New Doctor on the whole holds sensible views on alcoholic and other excess. He recognizes that ale is bad for invalids, and recommends weak gin and water as far more wholesome than strong ale. "A festive season is approaching; beware, readers, of the dire effects of overloading the stomach"—thus he ends a Christmas article.

The major diseases are still treated by the New Doctor in the traditional manner. Thus "an excellent receipt for consumption" is Dr. Babington's, consisting of "one drachm of compound tincture of camphor, a few drops of aniseed oil, and two ounces of infusion of roses." This draught, amounting to a cough mixture, is to be taken twice a day to ease cough and irritation. "Cancer quackery," as it is called, is condemned, but the views of cancer set forth by this old therapeutist show that the disease was then rarely diagnosed. Too often, manifest carcinoma was set down as scrofula. A case of Asiatic cholera among the New Doctor's near neighbours is described at some length. Water contamination is not suspected as a cause of the disease, which is fatal in this case, and the patient is allowed to drink many quarts of pump water. The water supply of London, which the householder drew from pumps in the street, did not incur suspicion till long afterwards. The New Doctor is quite nonplussed as to the origin of cholera. He observes that in the great epidemic of 1832 the staff of the Free Hospital in Greville Street, "opened for cholera cases during its ravages in London," noticed that constipated patients did not recover. Constipation, then, he opines, must have something to do with cholera.

In one particular he just misses being a prophet. We quote here from his article entitled "Contagion communicated by Insects." "We are authorized," he says, "we think, to infer that infection, if not contagious, may be communicated by flies and other insects, and we are of opinion that this is one of the leading causes of the spread of destructive epidemics, such as plague, small-pox, and, perhaps, typhus fever." Mrs. Baillie, Diemerbruck, Francis Bacon, and Dr. Rush are quoted in support of his thesis.

"During the yellow fever in Philadelphia, in 1793, we are informed by the celebrated Dr. Rush, 'that a prodigious number of flies and musquitoes were observed.' 'The year 1663,' says professor Chapman, 'which produced a pestilential fever amongst the settlers at Plymouth, New England, was also remarkable for swarms of large flies, filling the woods with their hum.' The same author informs us, that 'during the prevalence of a recent epidemic [? malaria] in America, which continued for three seasons, mosquitoes abounded beyond all former example; and on its cessation scarcely one was to be seen.' In some recent investigations, also, of the yellow fever, the black vomit was found, during the life of the patient, so filled with animalcules as to compose the chief part of it. Though the professor, however, states these facts, he will not admit that there is any foundation for the opinion which we have attempted to advocate; but he adduces no reason whatever, except that he considers it 'a much more rational conclusion,' that the unusual number of insects 'is owing to the state of things of which epidemics are the effect.' This position we would at once grant; but we think it extremely probable that a number of flies, musquitoes, or other insects, after alighting on a deceased or dead body, and afterwards alighting on a person in good health, may infect the latter.

"We should like much to see this matter farther investigated by those who have more learning and more time than we can bring to bear on the inquiry."

Among disease-conveying insects the New Doctor expressly ranks "animalcules," which, he avers, are found in vast quantities in stagnant water and, among other things, in infusions of oats, barley, and wheat. Here, indeed, we have a dim adumbration of bacteriology and Pasteurism! He foresees the possibilities of the microscope:

"The naked eye takes in from the elephant to the mite; but here commences a new order reserved only for the microscope, which comprehends from the mite, to those twenty-seven millions of times smaller; and this order cannot be yet said to be exhausted, if the microscope is not already arrived at its highest possible degree of perfection."

VICTOR G. PLARR, M.A.

## INTELLIGENCE TESTS AND INDUSTRY.

THE Industrial Fatigue Research Board, in collaboration with the National Institute of Industrial Psychology, has instituted an inquiry into vocational guidance. In the course of the investigation much use was made of "tests of intelligence," most of which have up to the present been designed on a linguistic or verbal basis—that is to say, the answers to the questions submitted are expressed by means of words. It has been represented, first, that such tests, valuable as they are, may sometimes weigh unduly in favour of those which have a special facility for verbal expression, and may fail to discover intelligence, valuable for many industrial occupations, in those who have a special difficulty in using or understanding words; and secondly, that since with all individuals it is desirable to measure intelligence by the most comprehensive means possible, a combination of linguistic and non-linguistic methods is probably preferable to the former alone.

Miss Frances Gaw has made an investigation into what is known as "performance tests," which are mainly the production of American psychologists, and which have been tried and found directly applicable to children in elementary schools under the London County Council. The results of her investigations are now published in a pamphlet.[1]

The history of the developments of these tests is followed by detailed descriptions. Some of the tests, such as the Porteus maze test, are well known, others are of more novel type. Most of them are on quite simple lines and require no more intelligence than the recognition of a

[1] Industrial Fatigue Research Board. *Performance Tests of Intelligence.* By Frances Gaw, B.A. London: H.M. Stationery Office. 1925. (Pp. 41. Price 2s. 6d. net.)

shape and the production of this shape by the building up of pieces cut into several parts, for the formation of cubes or triangles, or of fitting pieces into a ground-work to fill up a simple jig-saw puzzle. Instructions are given as to the way in which the observer should note the actual performance of the child, and of the method of scoring adopted. Uniformity of method and marking is essential if the results are to be of any comparative value. Calculating intelligence quotients is not the only use that can be made of the scores It is sometimes desired to compare groups of subjects by means of a given test, as for example, 9-year boys with 9-year girls in the Porteus test; or to compare results from a given test within a single group, as, for instance, the range in the cube imitation test covered by 11-year-old boys. For either of these purposes it is sufficient to compare scores without reference to mental ages. It is noted that the differences between boys and girls in performance tests illustrate two of the sex differences in various intelligence tests found by Burt, Terman, and others—first, that while girls excel in a linguistic type of test, boys excel in a more perceptual sensorimotor type of test; and secondly, that girls usually excel in memory tests, boys in reasoning.

The President of the School Medical Officers' Group of the Society of Medical Officers of Health gave for his presidential address in October last an account of his experience with intelligence tests as an indication of the prospects of defective young persons.[2] The tests employed were the second edition of the Binet-Simon tests of 1911. A detailed account is given of the results of these tests when applied during school life and the subsequent careers of the children on leaving school.

Summing up the evidence obtained from this examination of 112 after-careers, he said that if a boy on discharge from the special school has an intelligence quotient of 50 or over, with an average annual gain of six months or more, if his character has been good, and if he has some manual ability, he will probably succeed even if his home conditions are poor and his physique below normal (unless there is actual disease of the heart, lungs, or nervous system or actual crippling deformity). He is still more likely to succeed if he can be allowed to leave at 14 years, suitable occupation having been found for him. If, however, he has already shown antisocial tendencies he will probably presently have to be placed in a residential institution, especially if these tendencies are encouraged by similar actions at home, the antisocial tendencies outbalancing all the other factors. . . . Out of 131 persons from whom this experience has been gained, . . . only 7 per cent. are earning enough to keep themselves, and 28 per cent. are earning on an average 9s. 8d. a week. . . . A very liberal estimate would place the number of those capable of maintaining themselves at . . . about 17 per cent.

With girls, however, the chances of remunerated employment are decidedly less, and the influence of the home greater whether by causing the girl to be unemployed in a good home or causing her to be sent to a residential institution from homes which are undesirable. Also, as far as the experience of this school shows, there is no chance of a girl obtaining remunerated employment if school attendance is enforced until she attains 16 years.

A less optimistic view would limit the number of those capable of maintaining themselves to the [7 per cent.] who are already earning enough to do so, and would expect that the remainder would become chargeable to the rates . . . either as inmates of institutions or workhouses . . . or by requiring outdoor relief. . . .

Institutional treatment is said to be impossible on account of the expense and the lack of institutions, but as it seems that great expense must ultimately be incurred to support these persons at a time when they will be too old to do anything towards earning their living, would it not be better to urge as strongly as possible the necessity for the increase in the number of institutions, and that they should be organized . . . so that every inmate should perform an amount of profitable work proportionate to his ability and be thus kept happily employed and earning something towards the upkeep of the institution? Thus segregated, the mentally defective persons would be kept out of mischief, and the output of mentally defective children would be appreciably reduced.

Special schools would then become only the preliminary observation grounds, at which the children could be graded, their special aptitudes, if any, discovered, and training commenced against the time when they would be drafted into the residential institution.

[2] *The Value of Intelligence Tests in the Prognosis of the Future of Mentally Defective Persons.* By James W. Fraser, School Medical Officer, Hull. 1924.

## CASSEL HOSPITAL FOR FUNCTIONAL NERVOUS DISORDERS.

THE third annual report of the Cassel Hospital for Functional Nervous Disorders at Swaylands, Kent, is, like its predecessors, of considerable interest and value, and serves in particular to draw attention to the fact that provision, such as this clinic supplies, for the treatment of mild mental cases meets a greatly felt need. The medical director, Dr. T. A. Ross, following the precedent of former years, gives the after-history of all those cases in which it was obtainable, for he believes that, while on the whole the after-report can be shrewdly guessed from the state on discharge, there are exceptions; and from the standpoint of scientific evidence, the longer the period of freedom from symptoms has lasted, the more is it likely that the methods of treatment adopted have been of real value.

The present report contains not only details of all the patients who passed through the hospital in the year 1923, together with the after-history of a large proportion of them, but also further reports on those who were under care during the years 1921 and 1922, whose subsequent histories have been kept up to date. These details are given in an appendix; in each instance the number of months between discharge and report is indicated. The cases are classified by Dr. Ross into various broad diagnostic groups: the first, which includes the largest proportion of cases, embraces the psychoneuroses; the second deals with drug addicts; the third with psychoses, which are mainly of the depressive type; the fourth with organic diseases; and the fifth with a few unclassified cases. An interesting feature of these tables is that they contain a further classification of the psychoneurotic cases according to the results obtained by treatment. The first table contains the patients who are now well or improved; the second, those who are not better but who are at work; the third, those who are improved but who do not admit that the improvement is due to treatment at Swaylands; and the fourth, those who are no better. Of the 144 patients discharged during 1923, 98 belonged to the psychoneurotic group; and of these, 11 were not heard from, 62 were classified in the first table, 3 in the second, 3 in the third, and 19 in the last. These results may be regarded as very satisfactory, especially as they are based upon the condition of the patients some months after discharge.

It is probably true to make the generalization that the psychoneurotic does not make such a clear and undoubted recovery as many psychotics who recover. Many of the latter give the impression that they are quite well and will keep well. The psychoneurotic, on the other hand, may greatly improve under the protected conditions of hospital life, but upon discharge, when he has again to meet the difficulties of domestic and social life, some of which may have been largely responsible for his breakdown, it is by no means unlikely that he will again fail to make a good adaptation. For this reason the treatment of these nervous cases must not merely consist of "a rest cure"; it must include a course of self-examination, a widening of the conscious outlook, and a frank facing of the realities of life. From the reference to the modes of treatment adopted made in the previous report we gather that the treatment given is along those lines, and probably that is why the after-history has been so satisfactory in a good proportion of the cases. Dr. Ross draws attention to the fact that since the hospital opened there has been a waiting list which has blocked admissions for periods of from at least six weeks to about three months. Indeed, but for the fact that many have been found to have made other arrangements when their turn for admission comes, the blocking would have been more serious than it has. Dr. Ross points out that while most psychoneurotic patients suffer from a chronic disorder, and for many the weeks of waiting are at worst only an annoyance, there are some who cannot wait without a serious aggravation of their symptoms; there are others who, if they do not come at once, cannot come at all: for example, school teachers, students, and the like, who must employ their vacation for this purpose, people whom one would be sorry to see give up their work. He goes on to show that the most obvious

way to effect a reduction of the waiting list is to keep the hospital strictly to that class of case for which it is intended. The report shows that a number of cases sent by practitioners turned out to be suffering from lesions of the nervous system, arteries, heart, and other miscellaneous organic diseases. The admission of such cases must cause much inconvenience and disappointment, and Dr. Ross devotes a considerable section of his report to an analysis of the signs and symptoms presented by those patients who were found to be the subjects of organic disease, in the hope that his observations may be of some help in differential diagnosis. It is mainly through improved diagnosis that the full use of the beds can be obtained, and Dr. Ross considers that the elimination of the psychotic cases is of the utmost importance also from this point of view. He proposes to defer the discussion of this subject to another occasion, but observes that for certain patients with psychotic depression the hospital provides a suitable environment, though it does not do so by any means for all who are sent in.

# England and Wales.

### Hugh Owen Thomas Memorial Lecture.

During the war the council of the Liverpool Medical Institution resolved to establish a fund to keep green the memory of Hugh Owen Thomas, truly described as a surgical genius. Subscriptions came from surgeons the world over, and the council of the institution decided to establish a lecture on some surgical aspect of orthopaedics, to be delivered every two years by some eminent surgeon, and to use the interest of the fund for his honorarium. The second biennial lecture was delivered by Dr. Robert B. Osgood, of Boston, U.S.A., at the institution on June 2nd. There was a large audience, and the president, Mr. R. C. Dun, who was in the chair, introduced the lecturer in graceful terms. At the outset Dr. Osgood paid a tribute to the memory of Hugh Owen Thomas, and referred to Sir Robert Jones as a leader in orthopaedic surgery. Dr. Osgood took as the subject of his lecture the orthopaedic aspects of chronic arthritis. We hope to publish a report of the lecture in a subsequent issue. The lecture was listened to with attention and was much applauded. The president, in thanking Dr. Osgood, alluded to his inspiring qualities as a teacher.

### University of Liverpool.

At the graduation ceremony held in St. George's Hall on June 5th, the Chancellor, Lord Derby, conferred the honorary degree LL.D. on Sir Dyce Duckworth, Bt., and on Sir Robert Jones, K.B.E. Sir Dyce was described as a distinguished alumnus of the old Liverpool Royal Infirmary School of Medicine, whose loyalty to Liverpool and his old school has been steadfast. A lover of books, a lucid teacher, a polished speaker, a writer who has advanced clinical medicine, the Chancellor expressed his pleasure as a Lancashire man on paying Sir Dyce the highest honour the University could bestow. Sir Robert Jones, who was greeted with vociferous applause by the students, was introduced as the greatest bone surgeon of this or any generation, renowned and honoured the world over. Through his influence and teaching he had been the means of saving to the Empire and the Allies a vast number of lives, and it was owing largely to him that our streets show relatively so few cripples as compared with bygone days. The Chancellor recalled the fact that as War Minister he had appointed Sir Robert to the Medical Advisory Board of the War Office. The illustrious surgeon had not kept his great skill and knowledge for Liverpool only, but had given them to the world at large. The University delighted to pay Sir Robert this high honour as a tribute to his outstanding ability in his profession.

### Presentation to Dr. W. E. Thomas.

Dr. W. E. Thomas, J.P., of Ystrad-Rhondda, was presented, on June 6th, by the insurance practitioners of Glamorgan, with his full-size portrait in oils, painted by Miss Margaret Lindsay Williams, as a tribute to the great services he has rendered to the medical profession, and to the British Medical Association, of whose Council he has long been a member. A diamond brooch was given to Mrs. Thomas on the same occasion. The chairman of the presentation committee, Dr. J. Morgan Rees, laid stress on the great value of the yeoman service rendered by Dr. Thomas, not only to the medical profession, but also to the social and public life of South Wales and Great Britain. Dr. Howard Davies emphasized the courageous way in which Dr. Thomas had tackled so many difficulties in the past; and the Medical Secretary of the British Medical Association, Dr. Cox, speaking in the same strain, added that, in addition to his other qualities, Dr. Thomas had the very rare power of inspiring affection wherever he went. Dr. Thomas, replying, said that during the forty years he had lived in the Rhondda he had found that the people there proved to be very good friends. It was owing to the great self-sacrifice of his wife that he had been able to devote so much time to public work. Dr. Thomas was the guest of honour at a banquet which was held the same evening, when the toast of "The British Medical Association" was proposed by Sir David Evans, and the toast of "Our guest, W. E. Thomas, doctor of medicine, justice of the peace, and prospective high sheriff of his native county," was proposed by Sir Ewen Maclean. Dr. Thomas, in his reply, expressed his gratitude for the warm appreciation of his work. He was glad that his friends and colleagues had deemed him worthy of such a present in spite of the fact that he had never concealed or been false to his political or professional views.

### Public Health Needs of London.

The Minister of Health, the Right Hon. Neville Chamberlain, M.P., received on June 8th a deputation from the London County Council, which submitted to him the report of the Special Committee on Health Administration in London. In submitting it, Captain C. E. Warburg, chairman of the Council, laid special emphasis on—

(1) The necessity for an early reform of the Poor Law, along the general lines of the report of the Maclean Committee, in order that a fuller use might be made of the existing Poor Law institutions in the treatment of disease. Pending a settlement of the future of Poor Law infirmaries, it was not possible to reach a satisfactory position as to the hospital needs of London and, in particular, as to the use which might be made of the existing infirmaries in connexion with advanced cases of tuberculosis.

(2) The need for the revision and consolidation of the Acts relating to health services in London.

(3) The desirability of an expert inquiry into the question of the disposal of refuse.

(4) The advisability of a technical inquiry into the problem of dealing with the drainage of London. This arose particularly in connexion with the pollution of the River Lea. One obvious solution of the problem was that the drainage of the outlying districts at present discharging into the Lea should be taken by the London County Council, but the capacity of the Council's sewers was limited, and the Council also felt that it should not lightly add to the volume of effluent discharged into the River Thames.

(5) The desirability of instituting an inquiry into the after-care of tuberculous patients. Valuable as were the experiments being carried out at Papworth and Preston Hall, they could never by themselves provide a solution of the problem of tuberculosis in urban districts. Patients who returned from sanatoriums partially restored to health were in danger of relapse when they came back to the conditions of life in which they had originally contracted the disease, with weakened physique and earning capacity.

Mr. Herbert Morrison said that Labour members of the Council gladly endorsed this report so far as it went. They attached particular importance to the reform of the Poor Law, which had been promised for the last five years but had never made any progress. The Labour members did not, however, endorse the view that management by joint committees would be satisfactory; the alternatives were local administration pure and simple, or central administration,

Smoke knew no borough boundaries, and he was satisfied that the responsibility for dealing with smoke abatement should be laid primarily on the central authority for London. Mr. H. Arthur Baker, J.P., speaking for the Progressives, said that they warmly endorsed the report.

The Minister said that he welcomed the description of the relation between the Ministry, the London County Council, and the metropolitan borough councils as a partnership. He was satisfied that great value had been derived in the past from the surveys that had been jointly undertaken by the Council and by his department. The latter he regarded in the light of a sort of general staff in dealing with health matters. The Ministry of Health, ever since its foundation, had always been hampered by the demands made on the attention of Ministers by the housing problem, but this was only temporary and partial, and was now, he hoped, well on its way to settlement. He had already publicly announced his intention of dealing with the reform of the Poor Law next year, provided always that he was successful in getting the Rating and Valuation Bill, which was an essential preliminary, through the House of Commons this year. He agreed with the deputation that in dealing with advanced cases of tuberculosis it was highly undesirable to segregate them in special institutions, to be sent to which was regarded by the patients as equivalent to a sentence of death, but he was not yet satisfied that the existing Poor Law infirmaries were necessarily the best suited for that purpose. He agreed that in connexion with hospital provision, both for tuberculosis and other diseases, some central co-ordinating authority was necessary. This was a subject which would require further discussion. He had included a bill for smoke abatement in his programme for next year, but he was not clear that the view of the London County Council with regard to the advantages of central control in this matter represented the views of the majority, but he would give this point further consideration.

The consolidation of the Public Health Acts was in hand, though it would be necessary for him to pass a further amending bill next year before consolidation could be carried through.

He was inclined to fall in with the suggestion of an expert inquiry into refuse disposal, with a view to the issue of an authoritative technical report, though more information on this subject was already available than was generally made use of. Further consultation with the interests concerned, such as the metropolitan borough councils, would be necessary before he could set up the committee.

The drainage of London was rather a question for the London County Council itself to consider. It was clear that not much more sewage could be taken from outside districts without either enlarging the sewers or undertaking expensive works for the treatment of sewage, or possibly both. Either alternative would be very expensive. If the Council agreed he would gladly associate a technical officer of his department in an inquiry, and he thought that there should also be representatives of other authorities.

The after-care of tuberculous patients he regarded as an essential part of schemes for the treatment of the disease. If relapses of patients whose condition had been relieved were to be avoided suitable occupation under medical supervision was absolutely essential. Papworth and Preston Hall were useful examples of what could be done along these lines, but he agreed with the Council in thinking that they did not provide the solution of the problem so far as it affected the urban population. He had under consideration measures for increasing the after-care provision available.

### THE LONDON HOSPITAL.

At the recent quarterly court of the Governors of the London Hospital Lord Knutsford announced that Mr. Bernhard Baron had presented £10,000 to the hospital for the erection of a pathological institute. The cost of the new operating theatre presented by Lord Bearsted would be about £7,000, and the donor desired that the difference between this cost and his gift of £10,000 should be invested so that the interest on the sum might be devoted to medical research. A new hostel for the resident medical staff was to be built at the cost of £39,983; the children's department was to be enlarged and improved so as to serve as a consultative centre for all the child welfare organizations in the East of London. The honorary medical staff would be increased by the addition of a specialist in children's diseases.

### UNIVERSITY COLLEGE, READING.

It is probable that University College, Reading, will soon become an independent university, the Privy Council having issued a notification that it would be prepared to recommend the grant of a Royal Charter subject to certain financial conditions. The College was founded thirty-three years ago in part of the old Abbey of Reading, from which it was transferred in 1904-5 to its present site. In 1906 the College Hall (seating 1,000 people) was opened, and in 1911 it was decided to apply for the status of a university, an endowment of £200,000 being in hand at this time. This application was delayed by the war, but after the armistice the recovery of the College was rapid, and in June, 1920, it was decided to proceed with the application for a university charter. The reply to the petition, while approving in principle the establishment of a university at Reading, required that there should be an increase in the number of students reading for university degrees, and that the College income should approximate £80,000. The present College income, apart from the halls of residence, has now reached this figure; including that from the halls it is more than £120,000. The first of these six halls was founded in 1905, and in 1908 the late Lady Wantage endowed a residential hall for men; soon afterwards an existing women's hostel was transferred to St. Andrew's Hall. The Faculties of Letters and Science are the foundation of the teaching, and there has been added a Faculty of Agriculture and Horticulture, including the British Dairy Institute and the Research Institute in Dairying. Supplementary faculties include the three schools of fine arts, music, and domestic subjects. The main site of the College building occupies about ten acres, interspaced with lawns and gardens. The residential halls are all within walking distance of the College, which owns about 530 acres of land.

## Scotland.

### EDINBURGH POST-GRADUATE COURSES.

THE programme of the vacation courses conducted by a Committee of the University and School of Medicine of the Royal Colleges at Edinburgh has been issued. The courses begin on July 13th with one on obstetrics and gynaecology lasting four weeks. It includes daily clinics on midwifery at the Maternity Hospital, followed each day by clinics on gynaecology in the gynaecological wards of the Royal Infirmary. In the afternoon there will be ante-natal clinics, lecture demonstrations on obstetrical and gynaecological pathology and on infant feeding and ophthalmia neonatorum. Concurrently with this course another will be held upon diseases of children in the Royal Hospital for Sick Children. It will include medical clinics, surgical clinics, and clinics on ear and throat diseases, eye diseases, nutrition, child welfare, venereal diseases, and dentistry. From August 10th to September 5th there will be a general medical and a general surgical course. The medical course will include demonstrations on applied anatomy, a series of clinics in which the examination of the different systems will be taken up in rotation—the respiratory system, ductless glands, renal and alimentary systems, nervous system, and circulatory system respectively; a number of clinics upon dermatology, venereal diseases, diseases of children, diseases of the eye, and diseases of the blood. A few meetings are devoted to morbid anatomy, dietetics, genetics, comparative pathology, radiology, hydrology, and tuberculosis. The surgical course will include demonstrations on applied anatomy, general surgery, diagnosis of renal disease, and surgical pathology. Surgical and gynaecological operations in the Royal Infirmary and

Royal Hospital for Sick Children and a series of meetings and special lectures are open to those attending both the medical course and the surgical course. During the period of the general courses in August and September special classes will be held upon vaccine therapy, medical chemistry, and diseases of the blood, while at an earlier period of the summer courses will be available upon tuberculosis, clinical therapeutics, insulin therapy; venereal diseases, surgical pathology, diseases of the nose, ear, and larynx, ophthalmoscopy, and radiology. For each of the last-named classes a special fee is payable, while the courses on diseases of children, obstetrics, and the general medical and general surgical courses are covered in each case by a composite fee. Further information can be had on application to the Secretary, Post-Graduate Courses in Medicine, New University Buildings, Edinburgh.

### MAN'S EVOLUTION.

Sir Arthur Keith took as his subject for the eighth Munro Lecture given in the Anatomy Theatre of Edinburgh University, "Australian aborigines, ancient and modern." All that was known of the early peoples of Europe had been derived from the study of fossil bones and of stone implements; but in Australia the anthropologist could still study living types of "fossil man." The Australian aborigine still retained a primitive mode of living. He neither sowed nor reaped, but was dependent on the natural produce of the soil and on his prowess as a hunter, just as were the inhabitants of Western Europe until some eight thousand years ago. In his body, also, the Australian aborigine was of a primitive type, and he might serve as a common ancestor of living types of Caucasian, Mongolian, and Negroid, but he had retained more than they the characters of the common ancestor from which all living races had arisen. Sir Arthur Keith discussed the possibility that a band of humanity had broken away from the ancestral stem at the dawn of the modern racial differentiation, and had somehow succeeded in reaching Australia. A discovery made in Australia eleven years ago made it reasonable to believe that the aborigine reached that continent long before the Ice Age had come to an end in Europe, although it was certain that Australia had been isolated by sea from the rest of the earth for many geological ages. This discovery was announced to the British Association in 1914 by Sir T. Edgeworth David and Professor J. T. Wilson, who had produced a fossilized human skull which had become exposed on the bank of a stream at Talgai in Queensland. These observers showed that this Talgai skull was in the same state of fossilization as extinct kinds of pouched mammals, which occurred abundantly in a stratum in the neighbourhood of Talgai. The discovery of the Talgai skull proved that man reached Australia and saw alive certain types of marsupial animals which were known to geologists only by fossil bones; the evidence made it appear that the Talgai man equalled in antiquity the Neanderthal man in Europe. In only one respect did the fossil skull differ markedly from modern aboriginal skulls, and that was in the size of the jaws. Never before had a human skull been seen with such a width of muzzle, while the roof of the mouth was shaped as in anthropoid apes, but the canine teeth were not prominent and pointed as they were in these animals and also in Piltdown man. The same process of jaw reduction had taken place in the development of the Australian aborigine as was seen in that of the Caucasian inhabitants of Europe. Sir Arthur Keith, however, did not think that this was to be explained as the result of eating soft and easily masticated food, for some races were much more liable to jaw reduction and jaw deformity than others eating the same kind of food. The people of the North-West of Europe, for example, particularly the Scottish people, were much more liable to irregular growth of jaw than the Southern races of Europe. The land bridge by which the ancestral people reached Australia was represented now by the Malay Peninsula, Sumatra, and Java, but the original Australian aborigine must have crossed a stretch of sea some twenty miles in width, taking with him his wife and his dog, from which the Australian dingo was descended, although it clearly hailed originally from Asia. Representatives of the early Australian human stock were to be looked for in India and in the Malayan parts of Asia. The Mongols had generally wiped out all traces of this stock, but in certain jungle tribes of Southern India individuals could still be recognized with a definite resemblance to the Australian aborigine. The first colonization of Australia had, therefore, taken place from Asia at a time when our forefathers in Europe were scrambling for a living on the edge of the ice sheet. Tasmania stood to Australia as that continent stood to the rest of the world. The early Tasmanians were now extinct, but their stone implements were of a kind used by Europeans at a very early stage of evolution. The Tasmanian had had more of the negro in his composition than the modern Australian black now has.

In the ninth lecture Sir Arthur Keith dealt with the discovery of the real missing link. He believed that the discoveries of fossil man which had been made in Java by Dr. Eugène Dubois, Professor of Geology in the University of Amsterdam, had been of the greatest importance in reference to Darwin's theory regarding man's origin. Many missing links had been discovered in the chain which leads from ape to man. There were now only three kinds of great anthropoid apes—the gorilla and chimpanzee in Africa, and the orang in Borneo and Sumatra; but fossil fragments of at least twelve extinct kinds of great anthropoids had been found in Europe and India. All of these were "missing links" in the sense that they connected together the living types of anthropoid apes and showed what an immense family of these there had been in long past times; but none of these seemed to take us appreciably nearer to man than did the living gorilla or chimpanzee. At the human end of the scale, however, the case was quite different, for the fossil remains of Europe, Africa, and Australia carried the human lineage a decided step backwards towards an anthropoid stage, although between the lowest fossil man and the highest anthropoid there was still a wide gap. The fossil form found by Dr. Dubois in Java in the early nineties of last century had fitted into the middle of this gap and it had received the expressive name of Pithecanthropus. Of the Java man the skull cap, teeth, and thigh-bone had been found. The streams of Java made a record of history just as did those of Europe, and in their deposits were wrapped up the bones of the animals that lived on or near their banks. The fossil animals which had been found near the bones of the Java man were those found in deposits of India of late Pliocene date.

In the tenth and last lecture of the series Sir Arthur Keith gave a summary of the origin of the "Nordic type"—that is, the kind of man who made up the backbone of the population of North-West Europe, including the British Isles. Fifty years ago anthropologists had spoken of Celts and Saxons, and had held that the British people was an imperfect amalgamation of these two races. The politician still retained these terms, which he rightly believed stood for realities of race, but the scientific anthropologist had had to abandon the idea of race, and only spoke of types. Amongst modern Europeans three main types were to be distinguished: the "Nordic type," which was tall, fair, long-headed, and usually long-faced, and formed the ancestral types of the peoples of Britain; the "Mediterranean type," which had had its home since remote times in the South of Europe; and the "Alpine type," distinguished from the other two chiefly by the rounded shape of his skull. The Nordic type was a development of the Caucasian stock which had ousted Neanderthal man about 20,000 years ago. The earliest known representatives of the Nordic race were two skeletons found in sand deposits on the Rhine opposite Bonn, one a man and the other a woman. Both had been buried with tools and ornaments used by reindeer hunters in the final phase of the Ice Age, the bodies had been sprinkled thickly with red ochre and interred with ceremony, and they dated from a period some 12,000 or 14,000 years ago. While the male skull had strong jaws, wide cheek arches, and heavy eyebrow ridges, the woman's skull had been like that of her modern representatives. This structural difference between the sexes had been

exaggerated in all of the early European pioneers, among whom the woman seemed always to be ahead of the man in evolutionary progress. At a much later date traces of early Nordic people had been found in the Baltic lands and in Scotland, but though their stone implements and bone harpoons were known the very early burials of these Nordic people north of the Humber had not yet been found.

### SCIENCE AND HEREDITY.

A lecture upon the inheritance of acquired characters was delivered on June 4th by Dr. F. A. E. Crew, lecturer on genetics in the University of Edinburgh, under the auspices of the Workers' Educational Association. Professor N. Kemp Smith presided. The lecturer said that a character might be either genetic in its origin (that was to say, associated with a hereditary mechanism) or it might be produced by environment (that is, due to the impression on a plastic body of a change in use or in surrounding influences). It was, he considered, established beyond doubt that every character based upon determiners in the germ plasm was hereditable, and the mode of its inheritance could be predicted. It was also established that any character that had no base in the germ plasm was not inherited. There was no doubt, however, that the effects of use and disuse, as well as of external changes, led to profound modifications in structure, form, and function. The question at issue was whether or not the latter agencies could affect the germ cells of an individual in a permanent manner. It was known that alterations in the germ plasm were not uncommon, and that having taken place such an alteration persisted, but the causes producing them and the manner in which they occurred had not yet been discovered. It was possible to affect the germ plasm by subjecting it to the action of alcohol or $x$ rays, but such methods were similar to dissecting a flower with a charge of nitroglycerin. As technique improved, however, more localized and delicate interference with the ordinary processes of hereditary transmission might be expected. At present such evidence as existed seemed to lead to the conclusion that acquired characters were not transmitted in inheritance, and that it was not, therefore, reasonable to base any line of action in sociology or education on the assumption that they were.

### FORTHCOMING CONGRESSES IN EDINBURGH.

The Inter-State Post-Graduate Assembly of America, which is at present visiting various medical schools in England, will pay a visit to Edinburgh on June 18th, 19th, and 20th. The members of the Assembly will be received on June 18th by the Vice-Chancellor of the University in the McEwan Hall, where the honorary degree of LL.D. will be conferred upon Dr. Charles Mayo of the Rochester Clinic, Minn. On the evening of the same day the Lord Provost and magistrates will hold a reception for the members of the Assembly in the Royal Botanic Gardens. The greater part of Thursday and Friday and the morning of Saturday will be spent in the Royal Infirmary, where operations and ward clinics are to be conducted by members of the staff in the forenoons and a series of "dry clinics" delivered in the afternoons. A museum of surgery, pathology, and tropical diseases is being arranged in the Pathological Department of the Royal Infirmary. Arrangements are being made for a visit to Holyrood Palace on Friday, June 19th.

The Congress of the Royal Sanitary Institute opens in Edinburgh on July 20th, and will, it is expected, be attended by between 1,200 and 1,500 delegates and members. The Congress is the thirty-sixth of the series, will last for five days, and will be attended by visitors from almost every country in the world. The Secretary for Scotland, Sir John Gilmour, will deliver an inaugural address on the opening day of the Congress. The meetings will be held in the University of Edinburgh, and visits have been arranged to various health institutions and to places of historical interest in and around Edinburgh. The Health Exhibition, to be held in the Waverley Market, will be an important feature of the Congress.

# Ireland.

### VACCINATION IN THE FREE STATE.

IN a recent discussion in the Dail with regard to the Ministry of Local Government urging local authorities to prosecute in the case of vaccination defaulters, Deputy Sears said that the Minister of Local Government should amend the Irish law so that it would be on the same basis as the English law. Parents in Ireland to-day were bound by the law to vaccinate their children. In Wexford, however, two or three out of every four children were not vaccinated, and Wexford was as healthy as any other county in Ireland. The statistics compiled applied to deaths from measles, scarlatina, and other dirt diseases, and deaths from these causes had fallen considerably. Vaccination or other such treatment could not claim the credit of that decline. The same causes that had brought about the decline in measles and scarlatina brought about a decline in small-pox. The decline was due to improved sanitation and improved housing. Those things had brought about a better state of health in the country. Sir James Craig, M.D. (Dublin University), observed that on a previous occasion Deputy Sears had said that the profession was tired and needed a little amusement, and that the only way they could get amusement was by going around with their instruments and inserting dirty lymph in the arms of children. Deputy Sears did not go so far that evening, but he made statements which it should not be necessary for him to repel, but, from the attitude of the Dail, he took it that members would like him to reply. It was true that in England there had of recent years been epidemics of small-pox, but Deputy Sears was wrong in his conclusions, because statistics showed clearly that small-pox attacked unvaccinated populations, and where it did attack the vaccinated populations it attacked them in a mild way, and these were cases where revaccination had not been done within seven or ten years previously. Deputy Sears made a statement which ought to be repelled—namely, that the calf lymph used in vaccination was impure. He was surprised to have to refute such a statement. The Government had under its control an institution in which the calf lymph was prepared in the most hygienic surroundings and under the supervision of a most experienced bacteriologist, so that there was a guarantee that all the lymph distributed throughout the country for vaccination was absolutely pure. He would go so far with Deputy Sears as to say that in the old days when lymph was inoculated from arm to arm there was a certain risk of inoculating syphilis from one arm into another, and there was a danger of inoculating other blood diseases. That had entirely passed away with the pure calf lymph which was now being used for vaccination. He would venture the opinion that the reason why the people of Wexford had not allowed their children to be vaccinated was because they had been led astray by cranks. He did not for a moment admit that measles and scarlatina were dirt diseases. If they were dirt diseases they could have been eliminated altogether.

### PREVENTIVE AND CURATIVE MEDICINE IN THE FREE STATE.

Dr. T. Hennessy (Dublin City South), Irish Secretary of the British Medical Association, speaking recently in the Dail on the vote for the office of the Minister of Local Government and Public Health, said that in the administration of medical matters there were grave defects, both centrally and locally. He did not desire to attribute these defects altogether to the present Minister of Local Government and Public Health, who had made very considerable advances, especially on the preventive side. Any marked improvement in the general health of children would be brought about by good housing combined with proper and sufficient feeding. The present high mortality amongst Dublin children was due to insanitary housing and the want of sufficient and suitable food. Recent public health legislation had been on a comprehensive and generally on an up-to-date basis. The Dairy Produce Act was excellent in its conception, and would, he had no doubt, achieve at the butter factories everything for which it was intended, but to get

the full value out of this Act it would require a more rigid administration of the Inspection of Cowsheds and Dairies Acts, and he would suggest the employment of the Civic Guards, as otherwise the administrative cost would be prohibitive. He would also suggest that the Minister of Local Government and Public Health should see that the county medical officers of health to be appointed next October should receive an adequate salary with sufficient allowances for travelling expenses; if these officers were underpaid their activity could not be assured and they might as well not be appointed. The curative side of medicine in the Free State, although progressing, still had arrears to make up. The abolition of the office of medical commissioner in the Ministry of Local Government and Public Health was a distinct disadvantage; the medical profession did not, either in an official or advisory capacity, occupy the position which in the public interests it merited. The little importance the public seemed to attach to the amount of work which was done by the dispensary doctors was surprising. The returns for the Free State showed that 483,270 new cases were treated in 1923. More than a fourth of these were treated at the patients' homes. Owing to the reluctance and neglect of patients to produce tickets for medical treatment, the figures given would be nearer the true number if multiplied by three; this was true especially of patients who attended the dispensaries. For all this work the dispensary doctors received a total sum of £150,000 a year, which was very much less, at garage rates, than the mileage covered in attending the domiciliary cases. The Minister for Local Government and Public Health said that Dr. Hennessy's speech, whilst in some respects praising the Ministry, contained on the whole serious criticisms of its work. Dr. Hennessy seemed to think things would be better if there was a Ministry of Health and if the medical profession occupied a more prominent position in the Ministry. In 1904 the average salary of a dispensary doctor was £109 a year; it was now £251. Dr. Hennessy had inquired what the salaries of the new county medical officers of health would be. At present he (the Minister) was not in a position to state what the salaries would be, but he should say that they would be up to £700 a year, or perhaps more. He agreed with most of what Dr. Hennessy said in regard to the supervision of milking, but he believed the appointment of the county medical officers of health would remedy the matter. Moreover, the Ministry intended to appoint county veterinary surgeons to supervise all matters under the Dairies and Cowsheds Orders. He believed in vaccination, and he was convinced that its neglect in England was responsible for the recent outbreaks.

# Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

## The Finance Bill.

THE House of Commons resumed its sittings on June 9th, and discussed the Finance Bill in Committee on that and the following day. On June 11th it debated a Government proposal to impose a duty on imported lace. The Finance Bill will be further debated next week.

### *"Patent" Medicines.*

During the consideration of the Finance Bill on June 9th debate arose on Clause 2, which provides that the additional excise duties imposed by Section 11 of the Finance (No. 2) Act of 1915 upon medicines liable to duty should continue to be charged until August 1st, 1926. Mr. Wedgwood Benn complained of the manner in which this clause was drawn. It referred to the Finance Act of 1915, which in turn referred back to the Medicine Stamps Act of 1802, and that measure related to the Tonnage and Poundage Act of Charles II. The Act of 1802 set out a schedule of medicines liable to be taxed, which included Austin's chalybeate pills, Addison's reanimating European balsam, Clyde balsam, Guest's welcome guest powder, and Wheatley's ointment and fluid. An Act of 1812 revised the schedule, and that was the last revision he could find. He asked if it would be possible to include in the next Finance Bill a clause stating plainly what the taxes were and on what commodities they were levied.

Mr. Guinness (Secretary to the Treasury) said that the first legislation on this subject was passed in 1783. Since then there had been repeated amendments. He admitted that it was not very easy to summarize the principles on which the duties were imposed. Speaking generally, there were three alternative tests of whether a preparation was liable to duty. The first test was that it must be advertised, or, in other words, recommended as a specific for some illness or disease. If it was said that So-and-so's preparation cured headache it was liable to duty, but if it was said that such and such an ointment was good for the skin it was not liable. The second test was that the remedy should be secret, and the third that it should be proprietary. The proprietary test covered most of the preparations that came under the old Patent Medicines Duties. He would like to look into the codification of legislation on the subject, but that was a matter which concerned the Ministry of Health rather than the Treasury. A few years ago a Select Committee inquired into the subject, but nothing had been done as a result of its report. There were many more complicated forms of revenue collection, which were based upon a far more scattered legislative code than this particular duty. In view of the fact that it was working smoothly, he did not think the House would see any cause to resist the retention of this clause. The duty was doubled in 1915 as a war tax, and was now yielding over £1,300,000, which was nearly three and a half times as much as before it was increased. That showed that the tax was useful from a revenue point of view, and it was not pressing hardly on any section of the population.

Sir Alfred Mond said the matter had nothing to do with the Ministry of Health. If the recommendations of the Committee were adopted it would be necessary entirely to alter the process by which these duties were levied. A large number of American "patent" medicines or mixtures were imported into this country. The importers of these foreign productions were given an advantage compared with those of British manufacture. He suggested that an expert committee should be set up to study the question.

Dr. Haden Guest said that the compositions of most of these patent remedies were perfectly well known and quite simple. Their vogue depended on the extent to which they were advertised. The law on the subject should be codified and brought up to date before the next Finance Bill was introduced. If the tax were reduced to a reasonable and intelligent code more attention might be paid to the demerits of some of these productions.

The clause was then accepted by the House.

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*Operations on Children.*—Mr. Neville Chamberlain informed Colonel Day that statistics of the total number of deaths of children under 2 months old in workhouses and infirmaries were not available. In 1923 no infants under 2 months old died under or in connexion with the administration of an anaesthetic in a workhouse or workhouse infirmary in England and Wales. Colonel Day, in a supplementary question, asked whether the Minister of Health was aware that facilities had been granted by Westminster Hospital for the mothers of children to attend operations and to remain at the hospital so that they could feed their children at the breast. No answer was returned.

*Methylated Spirit Drinking.*—Mr. Guinness informed Commander Bellairs that he was not aware that the drinking of methylated spirits was on the increase. In the year ended March 31st, 1925, the quantity of mineralized methylated spirits sent out by makers in Great Britain and Northern Ireland was 1,388,448 bulk gallons.

*Subnormal Prisoners.*—In reply to Mr. Rennie Smith, the Home Secretary said male prisoners who, although not certifiable as insane or mentally defective, were unfit for the ordinary discipline of a prison, were collected in four prisons; similar female prisoners in three prisons. Since July 1st, 1924, ninety-one males, seven under 21 years of age, had been transferred to these centres from other prisons. Four female prisoners were transferred, one under 21 years. All were serving sentences of three months' imprisonment or more. In addition there were at the centres fifty males and eighteen females of the same class. All such prisoners were under special supervision. Brabazon classes had been arranged for those who were unfit for ordinary prison work. The prisoners were under the observation of the medical officers and of a selected staff, and special allowance was made for the inability of the prisoners to conform to prison discipline. The prisoners received extra facilities for exercise.

### *Notes in Brief.*

The Admiralty is inquiring into the complaint that at the Royal Naval Hospital, Simonstown, South Africa, English ratings of the Royal Navy are accommodated in the same wards as Kroomen.

The Under Secretary of Health for Scotland states that where a pauper lunatic in Scotland has been removed to an asylum without the consent of the relatives, the parish council can still recover the expenditure on maintenance.

The reports of the district medical insurance officers for Edinburgh, Glasgow, Aberdeen, and Dundee will not be published in full, but a summary with extracts of special interest will be embodied in the annual report of the Scottish Board of Health for 1924.

The Government cannot promise legislation to compel the insertion in every book of the date of publication.

During the three months ended May 1st last 21,674 houses were completed in England and Wales in connexion with State-assisted schemes, and 56,202 were in course of construction on the date mentioned.

# Correspondence.

## RAW PANCREAS BY MOUTH COMPARED WITH INSULIN.

SIR,—May I, as a diabetic, enter the arena in the important discussion that has been going on in your columns on the above subject? On the one hand Dr. Hollins and his supporters find raw fresh pancreas by mouth entirely satisfactory in the treatment of diabetes, and on the other Drs. Harrison and Graham find it utterly useless. The question is of the utmost importance to all diabetics, and the following experiment, conducted on myself, shows that raw pancreas is quite ineffective in severe diabetes. The idea that it may be a substitute for insulin may quickly lead patients to disaster.

The diet for the past eighteen months has been 45 grams of carbohydrate, 80 of protein, and 150 of fat, and insulin varied from 34 to 22 units a day, depending on the variations in the strength of insulin and the amount of exercise taken. Blood sugars have varied between 0.14 to 0.20 fasting level and 0.08 to 0.12 per cent. three or four hours after insulin. Glycosuria has been entirely absent except for occasional traces after breakfast. Insulin was discontinued on the morning of May 27th, and the diet kept constant, except to replace a corresponding quantity of protein when raw pancreas was taken. Fresh raw frozen pancreas was obtained, by the courtesy of the British Drug Houses, in the same condition as the glands from which they obtain the maximum of insulin.

The blood sugar on May 27th was 0.190 per cent. before breakfast (20 grams of carbohydrate); one hour after breakfast 0.302; two hours 0.295; three hours 0.268; four hours 0.260; and the urine sugar varied from 4 to 6 per cent. One ounce of raw pancreas was taken before lunch (5 grams of carbohydrate). The blood sugar one and a half hours after lunch was 0.258 per cent.; three hours after 0.236; then one ounce of pancreas, and one and a half hours later the blood sugar was 0.244 per cent. One ounce of pancreas before dinner (20 grams of carbohydrate), and the blood sugar two hours later was 0.278 per cent. One ounce at bed time. Next morning the fasting level was 0.278 per cent., and one ounce of pancreas was taken. The blood sugar one hour after breakfast was 0.340 per cent., two hours 0.350, three hours 0.340, and thirst and polyuria were severe. Insulin 12 units was then given; the blood sugar one and a half hours later was 0.245 per cent.; then lunch as before; and four hours after insulin the blood sugar was 0.105 per cent. While insulin was omitted and pancreas taken, the ferric chloride test for diacetic acid became positive for the first time for months.

Besides proving conclusively that raw pancreas is no substitute for insulin, the above shows what happens in a severe case when insulin is omitted. During the first five hours far more glucose was excreted in the urine (63 grams) than was absorbed in the food (47 grams glucose equivalent). On the second day, 23 grams was excreted during one hour alone after breakfast. This occurs because the carbohydrate which insulin has stored in the body as glycogen in the liver, etc., cannot be maintained and immediately floods the blood and urine with glucose. Dr. Cammidge seems to suggest that raw pancreas may at least control this "glycogenetic" function, but the above experiment disproves this also.

Dr. Hollins admits that raw gland is ineffective in insulin cases, and is at a loss for an explanation. What happens is that insulin temporarily makes the diabetic metabolism normal and builds up a normal glycogen store which at once reappears as glucose when the patient has to rely on his deficient endogenous insulin. Dr. Hollins himself finds in these cases that raw pancreas is no substitute for insulin, and is only effective where no insulin has been used—that is, in mild cases, I suspect. If raw pancreas acts at all it ought to act when insulin is omitted, as there is no evidence that insulin changes the nature of diabetes or does more than control it temporarily.

On reading the arguments on both sides, we see that in carefully controlled cases on *weighed* and constant *quantitative* diets, raw pancreas is no substitute for insulin and has no effect on severe diabetes. On the other side we are told that a "strict diet" was observed, but are given no details and are not even assured that it was weighed. Dr. Dunn states that his patient could only tolerate "1½ oz. of starchy food." Is this in the twenty-four hours or at a single meal? Is it 1½ oz. of bread or cabbage, which contain respectively 22 and 1½ grams of starch? The control of diet is the difficult factor in experimental work on human diabetes. One is often assured that a case is severe and has been on a strict diet and has not improved, while two or three days on a weighed diet renders the patient sugar-free and proves the mildness of the case. I do not suggest that the discrepant results obtained with raw pancreas depend entirely on such an obvious explanation, but the supporters, by giving no facts or figures, lay themselves open to this accusation. (I found raw pancreas so horrible as to prefer a dozen injections a day, if necessary, and I am sure that its continued use would have made me unable to eat much else—thus providing a simple method of introducing nausea, starvation, and undernutrition into the treatment!)

Raw pancreas has been carefully tried before and found wanting. Though it cannot replace insulin, the slender possibility still remains that it may stimulate and cause the release of endogenous insulin in mild or moderate cases. I intend to try such cases in a carefully controlled experiment lasting two or three months, and, though I am not hopeful, I shall be delighted to find evidence of its value in treatment.

In the meantime some patients, who have not had it, are clamouring for raw pancreas. Give it to mild cases by all means, if they insist, in an experimental frame of mind, but do not court disaster by its use in severe cases. —I am, etc.,

London, W.1, May 30th. R. D. LAWRENCE.

## THE BLOOD PRESSURE IN SPLENOMEGALIC POLYCYTHAEMIA: A SUGGESTION.

SIR,—It is not yet sufficiently recognized that in true splenomegalic polycythaemia (erythraemia, or the "Vaquez-Osler disease") the blood pressure is hardly ever more than slightly, if at all, above the average, in spite of the fact that, as measured outside the body, the blood viscosity is greatly increased. Some compensatory mechanism doubtless exists within the body to account for this. The mechanism in question is probably of autonomic nervous origin, and must, I think, depend on the reflex opening up of numerous blood capillaries, which would, under normal conditions, be closed or contracted. Active dilatation and contraction of capillaries play an important part in the regulation of the circulation—a part till recently hardly even thought of (cf. the investigations of Otfried Müller, Parrisius, and others with the skin microscope). Such a diffuse capillary dilatation in cases of splenomegalic polycythaemia is proved at necropsies by the great engorgement of the viscera with blood, and during life it manifests itself by the redness (often with lividity) of the lips, nose, ears, tongue, fauces, and elsewhere.

The "Studies of capillaries and blood volume in polycythaemia vera," by G. E. Brown and H. Z. Giffin, in the *American Journal of the Medical Sciences* (1923, cxlvi, pp. 489-502), intimately bear on this question, but the authors regard the (proved) dilatation of the blood capillaries as being rather compensatory for the increase in the total blood volume than for the increase of the blood viscosity.—I am, etc.,

London, W.1, May 30th. F. PARKES WEBER.

## THE EARLY DIAGNOSIS OF CANCER.

SIR,—Some twelve months ago it was suggested that the education of the public on the signs and symptoms of cancer would cause them to seek immediate advice. This has since been advocated by numerous writers in both the lay and medical press. So far as my experience goes it has done little good and much harm. People still do not go to their doctor for a lump in the breast, as they dread an operation. In addition, cancer phobia is developing, the sufferers from which it is impossible to convince. Some of these resort to quacks, who profit by curing such "definite" cases of the disease. After all, this is what one must expect, as the normal person rarely bothers about a disease the flesh is heir to. It is usually the neurotic who reads articles on medical subjects, the constant perusal of which will sooner or later lead his imagination astray. Most medical men will remember the imaginary diseases of student days

that disappear after experience in practical medicine, which alone can give a real appreciation of the value of symptoms. Few lay people can ever attain to this. To try to frighten the easy-going healthy Britisher—and cancer seems to prefer the healthy man—is foredoomed to failure, showing as it does a want of knowledge of the ways of our people.

It is a mistake to think that the early diagnosis of cancer will take place from without rather than from within the profession. What is necessary is to impress on the public that a medical examination at least once a year, and certainly after the age of 40, is just as essential as an annual holiday. During this the doctor could, without alarming the patient, find out whether anything suggestive of cancer was present. But for such an examination to have any practical value we must have a profession that is thoroughly conversant not only with the earliest signs of the disease, but is also aware of valuable methods of diagnosis when certain suspicious symptoms exist.

Those of us who have the responsibility of teaching students realize the importance of laying stress upon these points. But our teaching can be of the greatest value only if we are supported by the examiners. For the aim of the average student is to qualify; and he most appreciates that teaching which enables him to get through his examination. Should he qualify, he usually has a respect for the views of his examiners, which he remembers for the rest of his life.

I am afraid that in our efforts to make our students practical men we are not supported by the examiners to the extent we might wish. I shall take as an example the question of haematuria. At the end of each lecture on the subject it is my custom to stress the following points:

> Haematuria is a symptom and not a disease. Drugs have practically no action, and, being intermittent, it ceases whether treatment is carried out or not, no matter what the cause. As an apparently quite innocent variety of haematuria may be due to a cancer in the urinary tract, no medical man has the right to treat an undiagnosed case of haematuria, certainly after the age of 30, until a cystoscopy has been performed.

I do this with all the more zeal because in the last twelve cases of cancer of the bladder seen by me the average duration of the haematuria was two and a half years, and in only two was removal considered advisable. Yet some of our students tell me that at a recent final examination they were taken over the diagnosis of haematuria and stress was laid on the difference between that due to innocent and malignant growths of the bladder. The reply expected was that the bleeding of a papilloma is symptomless, that of a malignant growth is associated with frequent and painful micturition. Yet in practice one knows that in the earliest stages—and it is only here that the operative treatment of cancer is really worth while—there is no difference, and the diagnosis can be made only by cystoscopy. If our men who qualified remain impressed by the views of these examiners, then it is obvious that no improvement in the statistics of the operative treatment of cancer of the urinary tract can be expected.

Our knowledge of the early signs and symptoms of cancer might be abbreviated into about twenty rules. Were a knowledge of these, together with an acquaintance of the methods of investigation that are available, to be insisted on at all final examinations (in fact, the failure to answer one should be regarded as equivalent to a "plough"), then men from the day they qualify would be impressed with the necessity of being on the lookout for them. And this, combined with an annual overhaul, the wisdom of which is beginning to be appreciated by the public, and to which they will soon consent, will enable the precancerous conditions to be recognized at the time they are most suitable for treatment. No neurosis or morbid fear is set up; and the doctor will be able to influence the patient should any growth be found. It would thus be possible to accomplish in a short time what all the propaganda of to-day can do only after the expenditure of much money and time, and without any of its harm.—I am, etc.,

Cardiff, June 4th. T. E. HAMMOND, F.R.C.S.

## COELIOTOMY VERSUS LAPAROTOMY.

SIR,—In a memorandum on page 1006 of the issue of May 30th Mr. Maingot rightly uses the word "coeliotomy" to indicate a central abdominal incision, whereas in his heading "laparotomy" is used. I fear it is too late to impress on my colleagues that laparotomy is a misleading word; it designates an incision through the flank. (By the by, the word should be "laparatomy," the word for flank being λαπάρα, not λαπαρον). On the other hand, coeliotomy correctly indicates an abdominal incision; or, as old Dr. Robert Lee once called it, at a meeting of the Medico-Chirurgical Society in Berners Street, "belly-ripping." Bland-Sutton uses the correct term, but I do not know how many other surgeons do.—I am, etc.,

Chichester, June 3rd. HEYWOOD SMITH.

## ULTRA-VIOLET LIGHT.

SIR,—I have read with surprise Mr. Percy Hall's letter in your issue of June 6th (p. 1061).

He raises certain points which provoke inquiry. Writing about the mercury vapour lamp, he says: "Its fragility and varying output render it unreliable," and later, "The tungsten arc lamp is as great an advance over the mercury vapour lamp as is the Coolidge tube over the old gas-filled tube in *x*-ray work—that is, for operators who desire to standardize their dosage and results." Using the mercury vapour lamp experimentally, I have found it extremely easy to control, very reliable in its output, which can be maintained perfectly steady, making it possible to repeat exposures with accuracy and always producing the same result provided the necessary standard conditions are kept constant.

Dealing with the tungsten lamp, he says, "The only variable factors—target skin distance, amperage, and exposure time—are under the control of the operator." Lower down on the same page we find this: "The personal factor or idiosyncrasy of the patient is of the utmost importance. No two patients react alike, and no patient reacts in the same manner to successive doses." There is no suggestion as to how this factor is taken into account in treatment.

In another paragraph Mr. Hall observes that—

> "The skin reaction or erythema is nothing to go by. . . . I have given dozens of doses to infants and children without any skin reaction, and yet have achieved the results I desired. Similarly with pigmentation, which, more often than not, is what one wants to avoid. If pigmentation occurs too early further treatment is useless, as the pigment acts as an impervious screen to the ultra-violet rays."

It is interesting to compare the above statement with the following quotation from page 19 of Mr. Hall's book *Ultra-violet Rays in Treatment and Cure of Disease*:

> "This reaction (pigmentation) has to be carefully watched. It is an excellent guide as to both progress and prognosis. The degree of pigmentation is proportionate to the gain in the patient's powers of resistance against disease, and, roughly speaking, corresponds to his rate of progress towards cure."

Perhaps I may be allowed to quote also from a paper I read before the Royal Society of Medicine on April 17th of this year:

> "If pigmentation is aimed at as a standard of treatment this is tantamount to producing deliberately in the patient a natural and efficient protection against the very source of treatment employed. . . . If pigmentation could be avoided without preventing the penetration of the rays to the cutis vera it might prove more beneficial."

I should like to know what has led Mr. Hall to change his views between last year and last week; whether it is as a result of individual experiment, or as a result of work by others, and, if so, by whom.—I am, etc.,

P. REDINGTON PEACOCK, M.R.C.S., L.R.C.P.Lond.

London, W.1, June 9th.

## SEVERE DERMATITIS FOLLOWING ULTRA-VIOLET LIGHT.

SIR,—There are several points of interest in the paper by Drs. MacCormac and McCrea published in the JOURNAL of April 11th (p. 693). They do well to draw attention to the danger in the use of powerful remedial agents by untrained and inexperienced persons. It is to be hoped that

the lay press, which has recently made so much *réclame* for the artificial sunlight treatment, will give this aspect of the question an equal amount of prominence.

Such prolonged exposure to the rays as that to which this patient was subjected is very rarely employed therapeutically. It must not be denied, however, that irradiations up to an hour have been used upon patients without any untoward effects. These long exposures have only been given after a period of treatment had elapsed. The time of exposure is gradually increased, and the distance of the lamp from the body is gradually diminished. It is my experience that after a time the patient's skin becomes accustomed to the rays.

Accidents of the nature described are rare. Your contributors do not state the distance that the lamp was from the skin in their case. Distance is an important factor, especially when one is dealing with the air-cooled mercury vapour lamp. It is remarkable how well even comparatively severe burns heal.

The ultra-violet rays have on an average a penetrating power of about 1/2 mm. It has been observed, however, that exposure to the rays has a powerful effect on the whole economy of the body. It has been suggested by Hoffman (*Deut. med. Woch.*, 1919) that the skin performs a biological function—"Esophylaxie." In virtue of this view it is possible that the reaction of the skin of the back in Drs. MacCormac and McCrea's patient was in the nature of a defence reaction.—I am, etc.,

Johannesburg, May 7th. M. LIPSCHITZ, M.D.

## THE GENERAL PRACTITIONER.

SIR,—It has been left for our wise visitor Dr. Charles Mayo to voice the need of more of the ordinary common variety of doctor, "someone who can take care of people when they are sick." In one illuminating phrase he defines the field of general practice, and indicates its proper and peculiar function. Human nature sick demands something more than a book of rules of health, and this touch of nature it is the birthright of the ordinary doctor to give. No bureaucratic infiltration, no net of regulations, can dilute his efforts or hamper his steps in this the ultimate sphere of his life's work. But he must be worthy of the trust, and so silence the voices raised against him.

Dr. Mayo expresses the view that the next twenty years will see a relative increase in the number of general practitioners. The conditions of practice were never more burdensome than they are to-day. Modern developments have added materially to the weight of uncompensated work, and have immeasurably increased the wear and tear on mind and body. The practitioner is more accessible, more often consulted for minor ailments, more apt to have his time devoured by "the beginnings of disease" (often a mare's nest, alas!), more under the necessity of facing, guiding, and enduring that half-knowledge which is worse than ignorance. Yet his early training fits him for none of these things. The student sees our mistakes and knows nothing of our trials; his attitude towards the general practitioner is entirely uninstructed, though the majority must needs put on the ordinary doctor's mantle.

There is neither any sign that the burden of practice in the future will be lightened nor that the rewards will be greater. What inducements, then, can this field of work offer? An answer will have to be found, if Dr. Mayo is to prove a true prophet. Nevertheless, the necessity calls forth the men, but the obligation rests on the profession as a whole to ensure that it calls only the best men. —I am, etc.,

Birmingham, June 5th. W. A. STOKES.

## INDIVIDUAL MEDICAL DEFENCE.

SIR,—The suggestion that a British Medical Association scheme for individual defence would be in a position to prosecute its own members, unlike the present defence societies, did not originate from me, but from Dr. Manson himself. When Dr. Robinson afterwards states that such a procedure would be *ultra vires*, Dr. Manson, forsooth, deems my ground, not his, is cut away.

On the financial side I cannot see the necessity for laboured arguments. With the membership of the British Medical Association there can be no difficulty, if the members are convinced of its wisdom and utility.

It is on other grounds—of policy and higher expediency—I defer to the Medical Defence and London and Counties, who are in a better position for counsel on behalf of clients. "The ethical machinery" of the British Medical Association would occupy an invidious relationship, productive possibly of internecine warfare. Besides, I am not in love with machinery, and prefer ethical education.

I hazard the opinion that the British Medical Association is stronger outside, reserving its influence for matters of moment.— I am, etc.,

London, N.W., June 8th. RICHARD GILLBARD.

## FASHIONS AND FADS IN MEDICINE.

SIR,—I read with much amusement and profit Dr. Robert Hutchison's address on "Fashions and fads in medicine" (May 30th, p. 995).

When I was a junior student I spent many hours in the out-patient department sitting at the feet of a (now) fairly distinguished physician, who diagnosed practically every case of dyspepsia as "dilated duodenum." Exactly what this diagnosis was supposed to imply I was never very sure, but in view of subsequent experience I am tolerably certain that many of those patients were suffering from gastric and duodenal ulcers. If we asked questions we were met with specious explanations; and yet that physician was, and is, in many respects an exceedingly brilliant man.—I am, etc.,

June 7th. AMUSED.

## ARTIFICIAL PRODUCTION OF THE ANTIRACHITIC VITAMIN.

SIR,—In a leading article on artificial production of the antirachitic vitamin in the JOURNAL of May 30th (p. 1011), whilst discussing the activating action of ultra-violet light on substances not containing the fat-soluble vitamins, you say: "This effect is remarkable and unexpected, for Zilva in 1920 had shown that prolonged exposure to ultra-violet light actually destroyed the vitamins in cod-liver oil."

This reference to my work is not strictly accurate. My experiments showed that vitamin A was destroyed if the active oil was exposed to a mercury quartz lamp without taking precautions to prevent the oil from coming in contact with the ozone generated by the lamp. I was, however, able to demonstrate that if such precautions were taken no inactivation took place. Moreover, I found that ozone, even in the dark, destroyed the vitamin. —I am, etc.,

The Lister Institute of Preventive Medicine, London, S.W., June 2nd. S. S. ZILVA.

# Obituary.

## MICHAEL DEWAR, M.D.,

Edinburgh.

THE death took place on May 30th at his residence, 5, Chalmers Street, Edinburgh, of Dr. Michael Dewar, a well known practitioner in that city.

Michael Dewar was born in Leith in the fifties of last century, and after graduating M.B., Ch.B. in 1876, he held various appointments and began practice in Edinburgh in 1884. In 1890 he took the degree of M.D. at Edinburgh University with honours, presenting as his thesis for the degree "A clinical analysis of 1,000 obstetrical cases." Throughout his practice Dr. Dewar was regarded as an authority on obstetrical matters, and was a keen supporter of the Obstetrical Society of Edinburgh. His interest in this subject was recognized in the fact that at the time of his death he had been for five years deputy chairman of the Central Midwives Board for Scotland. After the passing of the Insurance Act, Dr. Dewar took a great interest in the working of the National Health Insurance system, and he had been for some years a member of the Edinburgh Insurance Committee appointed by the Town Council, for a time also acting as chairman of the Panel Committee. Various papers on medical subjects had issued from his

pen, such as "A clinical study of influenza during the epidemic of 1904-5," "Notes on puerperal eclampsia," an article on "Hospital reform," which appeared in the BRITISH MEDICAL JOURNAL in 1912, and an article on the "Administrative control of malingering," published also in our columns.

Dr. Dewar's connexion with the British Medical Association had for many years been very close. His duties as an office-bearer began with the honorary secretaryship of the South Edinburgh Division of the Edinburgh Branch, which he held from 1904 to 1910. Between the years 1904 and 1913, and again from 1918 to 1920, he acted as a member of the Edinburgh Branch Council, and in 1911-12 he was a member of the Central Council of the Association. In 1911 he was elected a representative of the South Edinburgh Division at the Annual Representative Meeting, and he acted as honorary secretary of the Edinburgh Branch from 1910 to 1913. His interest in National Health Insurance questions was evinced by his serving as a member of the Insurance Acts Committee of the Association from 1919 to 1922, and at the time of his death he was a member of the Insurance Acts Subcommittee for Scotland. At the Annual Meeting of 1912 he was one of the Vice-Presidents of the Section of Medical Sociology. Dr. Dewar also took a keen interest in local affairs, and for many years he had been session clerk of St. Stephen's Parish Church, Edinburgh. He leaves a widow, a daughter, and a son who for some years has acted as his assistant in medical practice in Edinburgh.

## JAMES SCOTT, M.B., C.M.ED.,

Late Governor and Medical Officer, H.M. Prison, Holloway.

AN important link with the criminal trials of the past has been severed by the death of Dr. James Scott in a nursing home in London on May 29th.

Born at Leith in November, 1853, he received his medical education at Vienna and Edinburgh, graduating M.B., C.M. with honours at the latter university in 1877. After a period spent on the resident staff of various hospitals in Bristol and elsewhere, he joined the prison service in 1881, entering with the highest testimonials from Lister, Clouston, Matthews Duncan, Grainger Stewart, and others. He first served as assistant surgeon at Dartmoor and Chatham convict prisons, and later became in succession medical officer at Manchester, Stafford, Holloway, and Brixton prisons. It was at the two latter that he gained the opportunity of making full use of his special abilities, for there the remand and trial prisoners of the metropolis and adjacent areas were sent for observation, and he became a familiar figure at the Central Criminal Court, London and Middlesex Sessions, and assize and session courts of the adjacent counties. He was soon recognized as an authority on criminal responsibility, and the judges before whom he appeared frequently expressed their confidence in his opinion. His imperturbability in the witness box was the result of the enormous pains he took in getting up his cases, and his wide experience, technical knowledge, and close attention to detail made him a difficult witness to upset. Although in the course of his duties he was frequently obliged to give evidence against prisoners, they seldom failed to elicit his sympathy, and he would often regret that his evidence was of necessity adverse to the accused. He was never tired of teaching his juniors that if they appeared for the prosecution the accused was entitled to have everything brought out in his favour that might assist his defence. But he never shirked responsibility, and his constant advice to a hesitating junior was to "grow shoulders" upon which to rest the burden. He was a tireless worker, but eventually years of strenuous and often harassing court work began to tell on him, and when he was offered by the Prison Commissioners the governorship of Holloway prison he accepted the appointment and held it until his retirement in 1912.

He was an ideal colleague, unselfish to a degree, always taking his full share of the work, and appreciating to the full such assistance as his juniors could give. He was always ready to teach such of them as were anxious to learn, and to work with him was an inspiration to his juniors. With his special experience and wide store of knowledge he was enabled to instruct as no textbook could. During these years he was, with other contemporaries in the prison service, steadily and unostentatiously directing attention to the importance of taking into consideration the individual mental condition of prisoners in relation to their treatment; and it is a matter for congratulation that these workers, each in his own sphere, laboured towards the same end, and that their results are effective at the present time. In private life he was exceptionally generous and hospitable; he endeared himself to a large circle of friends, and his constant thought, up to the time of death, was for others. Somewhat late in life he became a Freemason, and during the war his efficiency and energy were of very great value. At the time of his death he held the rank of P.P.J.G.W. A bachelor, he enjoyed the devoted attention of his sister to the end, and to her his numerous friends will extend their deep sympathy.

W. N. E.

## SAMUEL TAYLOR DARLING, M.D.

IN our issue of May 30th we recorded briefly the terrible accident that befell members of the League of Nations Malaria Commission in Palestine on May 20th, and gave an account of the career of Major N. V. C. Lothian, one of the party. Another of those killed by the overturning of the car was Dr. Samuel Darling, who for the past ten years had been a member of the staff of the International Health Board of the Rockefeller Foundation. Dr. Darling was a pathologist of unusual distinction, who made important contributions to the scientific knowledge of malaria, relapsing fever, dysentery, and parasitic diseases, particularly hookworm disease, filariasis, and trypanosomiasis.

He was born in Harrison, New Jersey, on April 6th, 1872. He received his degree in medicine at the College of Physicians and Surgeons, Baltimore, in 1903. From 1906 to 1915 he held the post of chief of laboratories of the Isthmian Canal Commission, Panama Canal Zone. His research studies in tropical medicine during this period won him wide recognition among the medical profession. In 1913-14 he accompanied General Gorgas on a sanitary mission to the Rand Mines and Rhodesia, South Africa. In 1915 he joined the staff of the International Health Board, and for the next three years he headed a medical commission engaged in investigating the causes of anaemia among the people of Malaya, Java, and Fiji. From 1918 to 1920 he served as professor of hygiene and director of laboratories of hygiene in the Medical School of Sao Paulo, Brazil. Since that time he had been director of a field laboratory for research studies in malaria, located at Leesburg, Georgia. He was recently appointed corresponding member of the Malaria Commission of the League of Nations. At the time of his death he was travelling with the Commission, which was investigating the prevalence of malaria in Palestine and Syria.

Dr. Darling was an honorary Fellow of the Royal Society of Tropical Medicine and Hygiene, London, he and General Gorgas being the only Americans so honoured. He had accepted an invitation to deliver the annual address to the society next month. He was also a Fellow of the American Medical Association, and a corresponding member of the following organizations: Helminthological Society, Washington, D.C., the Malaria Commission of the Health Section of the League of Nations, Société de Pathologie Exotique de France, and Sociedad de Medicina e Cirugia de Sao Paulo, Brazil. He was president of the American Society of Tropical Medicine for the year 1924-25. His published works include numerous studies on malaria, dysentery, hookworm infection, trypanosomiasis, and other tropical infections.

DR. DAVID JOHN LEWIS, who died on April 25th at Machynlleth at the age of 53, received his medical education at the London Hospital and in Edinburgh. He obtained the L.S.A. in 1903, and the diplomas of L.R.C.P. and S.Ed. and L.R.F.P.S.Glas. in 1904. He was elected F.R.F.P.S.Glas. in 1918, and graduated M.D.Durham in 1922. After holding an appointment as a ship surgeon in the Union Castle Line, Dr. Lewis engaged in private practice at Winscombe, Somerset, acting as medical officer

of Axbridge Union Infirmary and Sidcot School. He was at one time an assistant medical officer of Cornwall County Asylum, Bodmin. During the war he saw active service in the Dardanelles, on the Somme, in Salonika, and Egypt, was the officer commanding the Officers' Hospital, Streatham Hall, and surgeon to the Devonport Military Hospital; after the war he held appointments under the Ministry of Pensions at Bristol. In August, 1922, he succeeded the late Dr. W. R. Williams in practice at Machynlleth, becoming medical officer and public vaccinator for the district, honorary medical officer and surgeon of Londonderry Cottage Hospital, and honorary inspector to Machynlleth branch of the St. John Ambulance Association, which recently won the Loxdale cup and shield in the local Great Western Railway competition. Dr. Lewis was a member of the South Carnarvon and Merioneth Division of the British Medical Association. The funeral was attended by representatives of public bodies and local organizations.

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Dr. JOHN OKE HORDEN, who died on April 14th in his 72nd year, was the eldest son of the late Rev. John Horden, D.D., first Bishop of Moosonee. He received his medical education in Edinburgh, obtaining the diplomas L.R.C.P., L.R.C.S., and L.M. in 1877, and graduating M.B., C.M. in the same year. In 1878 he was appointed resident medical officer to York Dispensary, which appointment he held for several years. For the past thirty-nine years he had been engaged in general practice in West Hampstead.

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Dr. CECIL CHRISTOPHERSON, J.P., died at Bexhill-on-Sea on May 11th. He was a member of the well known Kent family several of whom have won distinction in athletics. He studied medicine at St. Bartholomew's Hospital, and obtained the L.S.A. in 1885 and the M.R.C.S. and L.R.C.P. diplomas in the following year. He was appointed assistant house-surgeon at the Royal East Sussex Hospital, Hastings, in 1893, and ultimately became senior surgeon. He retired from active work at the hospital in 1923 owing to illness, but continued his long connexion with the institution as consulting surgeon. His work for the hospital was recognized in a spontaneous gift, made to him by the professional and business circles of the town, of a handsome silver casket containing an illuminated address, together with a cheque for £500. The whole of that sum he handed to the hospital. Dr. Christopherson was one of the originators and founders of the Hospitals Benevolent Fund for East Sussex. During the war he served on the medical staff at Netley Hospital. He leaves a widow and two sons.

# The Services.

## TERRITORIAL AMBULANCE CHALLENGE SHIELD.

COLONEL E. C. MONTGOMERY-SMITH (secretary) informs us that the competition for the Ambulance Challenge Shield (T.A.) will take place at the Duke of York's Headquarters, Chelsea, S.W.3, at 2.30 p.m. to-day (Saturday, June 13th). Ten units will take part: 143rd (South Midland) Field Ambulance, 128th (Wessex) Field Ambulance, 170th (Cavalry) Field Ambulance, 125th (East Lancs) Field Ambulance, 164th (West Lancs) Field Ambulance, 48th (1st Southern) Casualty Clearing Station, 53rd (3rd Western) Casualty Clearing Station, 47th (2nd London) Casualty Clearing Station, 4th Battalion Prince of Wales Volunteers, 23rd Battalion London Regiment.

## INDIAN MEDICAL SERVICE.

As already announced, the annual dinner of the Indian Medical Service in London will be held at the Trocadero on Wednesday, June 17th. Lieut.-Colonel A. W. Alcock, C.I.E., F.R.S., will be in the chair. Tickets and all particulars may be obtained from the joint honorary secretary, Colonel J. J. Pratt, I.M.S.(ret.), 18, Nevern Mansions, Warwick Road, S.W.5.

## DEATHS IN THE SERVICES.

Lieut.-Colonel Joseph Sykes, Bengal Medical Service (ret.), died at Folkestone on May 5th, aged 71. He was born at Janmah in the Deccan, and got his first medical education in the Madras Medical College. He entered the Subordinate (now the Indian) Medical Department as a hospital apprentice on June 29th, 1874, and resigned two years later. He then came to Europe, matriculated at Glasgow University, and took the L.R.C.P.Ed. and L.R.F.P.S.Glas. in 1879. He entered the Indian Medical Service as surgeon on October 31st, 1879, became lieutenant-colonel after twenty years' service, and retired on December 14th, 1909. He served on the North-West Frontier of India in the Mahsud-Waziri campaign of 1881, and in the Egyptian war of 1882, when he was present in the actions at Tel-el-Kebir and Kassassin, and received the Egyptian medal and the Khedive's bronze star. Most of his service was passed in civil employment in the North-West, now the United Provinces. In 1883 he married Ada, daughter of Mr. Dyer, of Lucknow, who survives him.

# Universities and Colleges.

## UNIVERSITY OF CAMBRIDGE.

AT a congregation held on June 6th the following medical degrees were conferred:

M.D.—K. H. Tallerman.
M.B., B.CHIR.—H. Yates, A. R. Lister, G. F. Lund, J. P. White Jamie.
M.B.—G. B. Tait, H. E. Harris, R. A. M. Scott.

## UNIVERSITY OF LONDON.

### KING'S COLLEGE.

*Extensions in the Department of Physiology.*

AT the last meeting of the Senate of the University final approval was given to proposals of the delegacy for extensions to the department of physiology. Building will be commenced at an early date, and it is expected that the new rooms will be ready by the end of the long vacation. By the new building facilities will be provided for experimental research, a professor's room, and for the teaching of advanced practical mammalian physiology. In addition to the above, the rooms formerly occupied by the bacteriology department will be taken over for the teaching of biochemistry, the provision of animal and polarimeter rooms, and for a staff room and library. Approval was also given for the establishment of two research studentships, each of the annual value of £100, while a sum of £50 has been set aside to meet the expenses of such research.

The following have been recognized as teachers of the University in the subjects and at the institutions indicated:

*St. Mary's Hospital Medical School.*—Mr. W. D. Newcomb (pathology).
*Maudsley Hospital.*—Dr. F. L. Golla (neurology).

Applications for grants from the Thomas Smythe Hughes Medical Research Fund, allocated annually for assisting original medical research, must be sent in by June 15th to the Academic Registrar, from whom further particulars can be obtained.

The following candidates have been approved at the examination indicated:

THIRD M.B., B.S.—*‖J. C. Barrett, *†§R. A. Brews, *†‡C. P. Craggs, *†‡W. Evans, *†R. S. Johnson (*University Medal*), *†F. D. S. Poole, *†§Mary E. Tyars, *†‡Iris V. I. Ward, *‖A. J. Wrigley, Harriet E. Acheson, W. L. Ackerman, F. G. Allan, H. G. Anderson, Doris M. Baker, Margaret A. Bannermann, Alison E. M. Barnaby, P. C. Bennison, Dora M. Berry, T. S. Blacklidge, S. Bloom, W. G. Booth, R. Brooke, Hilda L. Byett, J. A. Carman, L. I. M. Castleden, E. H. P. Cave, Edith I. Clark, H. G. Close, Doris M. Collins, G. E. C. Collis, Cecily D. Crosskey, C. K. David, C. H. Devereux, A. C. M. Elman, Mary H. Elmitt, Barbara Finch, Mary S. A. Foden, F. G. France, I. W. Gallant, Florence M. Gamble, Katharine A. C. Gillie, A. W. Grace, G. E. R. Hamilton, A. B. Hodgson, M. W. P. Hudson, R. G. W. Husbands, Beatrice Jervis-White-Jervis, E. F. Johnson, B. H. Jones, H. Joules, N. E. ff. Kemm, V. J. F. Lack, Muriel A. Lester, N. L. Lloyd, A. McMillan, R. G. Maliphant, B. A. J. Mayo, J. H. Moore, H. S. Morley, Marjorie Murrell, Josefine W. Nagel, Elizabeth M. R. Newboult, Margaret D. Nichols, Helen E. D. E. Ornstein, W. E. Rees, Laura M. Rhodes, F. T. Ridley, J. J. R. Robinson, Sybil H. G. Robinson, Edith M. Ross Johnson, F. E. E. Schneider, W. G. Sears, C. N. Smith, Sylvia M. T. Smith, V. A. T. Spong, Nettie H. Stein, E. V. Suckling, G. P. Tatton, Catharine F. Taylor, R. W. Thomas, W. R. Thrower, Mary M. Wickham, E. R. P. Williams, Edith V. Wood, J. P. Yeoman.

* With honours. § Distinguished in midwifery.
† Distinguished in medicine. ‖ Distinguished in pathology.
‡ Distinguished in surgery.

## ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THE following have, after examination, been admitted as Fellows of the Faculty: John Gardner, Stanley G. Graham, Chandiram H. Primlani, James H. Robertson, and James Taylor.

## CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FINAL PROFESSIONAL.—Anna M. Allen, M. J. Cleary, R. F. G Dickson, J. A. Donworth, W. J. Flannery, C. Gardner, J. Graff, T. Griffith, D. J. Keane, M. J. Kelly, T. R. McCabe, M. A. Monahan, Aileen M. Mulcahy, M. O'Regan, B. Plunkett.
DIPLOMA IN PSYCHOLOGICAL MEDICINE.—Patrick Moran.

## ROYAL COLLEGE OF SURGEONS IN IRELAND.

AT a meeting of the College on June 3rd Mr. R. Charles B. Maunsell, Mr. Andrew Fullerton, and Sir F. Conway Dwyer were elected president, vice-president, and secretary respectively.

The following candidates have been approved at the examinations indicated:

FINAL FELLOWSHIP.—Dr. R. A. Keane.
PRIMARY FELLOWSHIP.—C. J. O'Kelly, J. Owens, M. A. W. Roberts, J. Scott.

# Medical News.

THE half-yearly dinner of the Australian and New Zealand Medical Association in England will be held at the Trocadero Restaurant, Piccadilly, on Friday, June 26th, at 7.45 p.m. All visiting Australians and New Zealanders wishing to be present should communicate with one of the honorary secretaries, Mr. E. T. C. Milligan, Mr. H. Bedford Russell, at 86, Harley Street, W.1.

THE annual summer dinner of the Glasgow University Club, London, is to be at the Trocadero Restaurant, Piccadilly, W., on Friday, July 3rd, at 7.15 for 7.30 p.m. The Right Hon. Augustine Birrell, K.C., LL.D., will preside. Any Glasgow University men who, though not members of the club, desire to attend are requested to communicate with the honorary secretaries, 1, Harley Place, N.W.1.

NOMINATION for the David Lloyd Roberts Lecture is in the hands of the Royal Society of Medicine for this year. Sir Arthur Keith, M.D., F.R.S., has accepted an invitation from the Council of the Society to deliver the lecture on November 16th.

THE annual general meeting of the Royal Society of Tropical Medicine and Hygiene will be held at 11, Chandos Street, W.1, on Thursday, June 18th. A demonstration at 7.45 will precede the meeting. At 8.15 the new President, Dr. Andrew Balfour, C.B., C.M.G., will be inducted. The Chalmers medal will be presented to Professor Warrington Yorke, who will read a paper on "Further observations on malaria made during treatment of general paralysis." Dr. G. C. Low will make an announcement on the use of a drug named "smalarina" in the treatment of malaria.

AT a meeting of the Central Midwives Board for England and Wales, on June 4th, when Sir Francis Champneys was in the chair, it was decided to inform the M.O.H. Gloucestershire that midwives living in District Nursing Association homes are, according to the general practice throughout the country, subject to the same rules as to supervision as midwives in private practice. It was agreed to place before the Royal Commission on Local Government a statement of the Board's views on the question of the transfer of functions under the Midwives Acts from county councils to other local authorities.

THE Fellowship of Medicine announces that Sir Gerald Giffard will lecture at No. 1, Wimpole Street, on June 17th, at 5.30 p.m., on some Madras methods in the teaching and practice of midwifery. A second course for general practitioners will be held at the London Temperance Hospital from June 22nd to July 4th. The special course in urology at St. Peter's Hospital has been postponed to June 29th to July 25th. From July 6th to 17th an intensive course in cardiology (limited to an entry of sixteen) will be held at the National Hospital for Diseases of the Heart. The Queen's Hospital, Hackney Road, will hold a course in diseases of children from July 6th to 18th, and from July 27th to August 15th the West End Hospital (Out-patients' Department, 73, Welbeck Street) will hold a course in the diagnosis and treatment of nervous diseases. Full particulars of these courses may be obtained from the Secretary, at No. 1, Wimpole Street, W.1.

THE annual meeting of the National Council for the Unmarried Mother and her Child will be held at Carnegie House, 117, Piccadilly, W.1, on Thursday, June 18th, at 2.30 p.m., with Lord Henry Cavendish-Bentinck, M.P., in the chair. The annual report will be presented, and a discussion on the Mental Deficiency Act as it affects unmarried mothers will follow.

AMONG the recent recipients of the degree of M.D. at the University of Lausanne were Dr. Charles A. H. Franklin (Sevenoaks) and Dr. Arthur Shirley (London).

DR. F. G. BUSHNELL, who a short time ago ceased to be assistant medical officer of health for Plymouth in circumstances indicated in the SUPPLEMENT of April 25th (p. 186), has been recommended by the Plymouth Public Health Committee for appointment as assistant consulting tuberculosis officer at a salary of £300 a year.

THE second Franco-Polish Medical Congress was held at the Paris Faculty of Medicine, under the presidency of Professor Roger, on April 28th, when addresses were delivered by Professor Roger, Dr. Krzysztalowicz, rector of Warsaw University, and M. Jules Godard, ex-Minister of Labour and Hygiene.

A COURSE on dermatology and venereal diseases will be held, under the supervision of Professor L. M. Pautrier, in Strasbourg, from September 21st to November 7th. Besides lectures and clinical, bacteriological, and histological demonstrations there will be individual training in the different therapeutic methods, including the use of carbonic snow, radiotherapy, electrolysis, and cauterization. The fee for the course is 200 francs. A special course in the principal laboratory methods and the general pathological anatomy of skin diseases will be arranged if five applications are received. The fee for the special course is 150 francs. Applications should be made to Professor Pautrier, 2, Quai St. Nicolas, Strasbourg, from whom information may also be obtained with regard to accommodation in *pensions* on reasonable terms.

THE third congress of French-speaking dermatologists and syphiligraphers will be held at Brussels from July 25th to 28th, when the following subjects will be discussed: the nature and treatment of tuberculides; the etiology of herpes febrilis and herpes zoster; syphilitic reinfection, pseudo-infection, and superinfection; endocrine disturbances due to inherited syphilis; modern treatment of lupus. Further information can be obtained from the general secretary, Dr. L. Dekeyser, 9, Rue des Sablons, Brussels.

DR. W. H. MAXWELL TELLING, who has occupied the Chair of Therapeutics in the University of Leeds for the past two years, has been elected by the Council of the University Professor of Medicine and head of the Department of Medicine, as from October 1st next, on the retirement from that office of Dr. T. Wardrop Griffith. Dr. R. A. Veale has been elected to the Chair of Therapeutics in place of Professor Maxwell Telling, and Dr. G. W. Watson has been elected to the Chair of Clinical Medicine, which has been vacant since the retirement of Dr. A. G. Barrs.

# Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the BRITISH MEDICAL JOURNAL must communicate with the Financial Secretary and Business Manager, 429, Strand, W.C.2, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the JOURNAL, should be addressed to the Financial Secretary and Business Manager, 429, Strand, W.C.2.

The ***TELEPHONE NUMBER*** of the BRITISH MEDICAL JOURNAL is *MUSEUM 9864*. The telephone number of the British Medical Association remains, until further notice, *Gerrard 2630* (internal exchange).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westrand, London.*

MEDICAL SECRETARY, *Mediscera Westrand, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 4361 Central).

## QUERIES AND ANSWERS.

### RESPIRATORY DISTURBANCE AFTER MEALS.

A CORRESPONDENT asks for information about the significance and treatment of a symptom characterized by a desire to take a deep breath, with difficulty in completing the final stage. This is sometimes accompanied by frequent yawning. It comes on about twenty minutes after meals and is considerably relieved by alkalis. Is it, he asks, a reflex spasm of the diaphragm, and is any special drug or diet advisable?

### MANGE.

"R. M." writes: Some patients of mine are very nervous about the possibility of mange in their cats being transferred to them or their children. They are compelled to keep them to prevent the house being overrun with mice, and they say their cats always get mange sooner or later. I told them that I was under the impression that each animal had its own parasite and could not transfer it to another animal. A cat gives mange to a cat, a dog to a dog, and so on, but a cat will not infect a dog. I should be glad to know whether I am correct or not in my ideas on this matter.

*** Several genera of mange mites infect the domestic mammals, but most of these are not transmissible to man. *Sarcoptes scabiei* occurs in all the domestic mammals except the cat, but in each case a special strain is found which, although indistinguishable morphologically from the other strains, yet

will only live on the other hosts with difficulty. All the strains of *Sarcoptes scabiei* will live on man; but in no case have they been found to cause a *severe* form of scabies, and it has generally been very easy to treat by the conventional sulphur dressing. "Sarcoptic" mange in the cat is caused by *Notoedres cati*, a form closely related to sarcoptes. There are now several well authenticated instances of its occurrence in human beings, and Ross in Australia has been able to prove it experimentally. In this case also infection, when it does occur, is not serious, and is easily treated. It is important, however, not to allow dogs or cats with mange to come into contact with children. The comparative rarity of the infection in man is probably due to a biological resistance similar to that existing in human beings against bovine tuberculosis. Cats and dogs also suffer from a form of ear mange and a form of demodectic mange which are not transmissible to man.

## LETTERS, NOTES, ETC.

### SLEEPLESSNESS.

DR. JAMES HOLMES (Bury) writes: With reference to "Scot's" inquiry about sleeplessness in the seemingly healthy, I venture to give my personal experience, hoping it may be helpful to him or others. Acting on a hint from the late Mr. Ernest Hart, a former Editor of the BRITISH MEDICAL JOURNAL, I have, for general sleeplessness, tried and found reading very helpful, provided it is not light literature or matter in which I was very interested. By preference the book should be on a subject as to which I felt I ought to be more or less well informed but in which I was not really interested. I frequently waken near 3 a.m., about the time of the body's lowest temperature, and lie awake for a considerable time, unless I draw an extra rug over me, in which case I generally feel warmer and soon fall asleep.

"M.B." writes in further reply to "Scot" (May 30th, p. 1026): For nearly a year I slept soundly on going to bed, but awoke, to begin with, about 4 a.m. and gradually, after about six months, not later than 2.30 a.m. I took a long holiday but was no better. I then saw a London specialist, who advised a rest cure in a nursing home, which was strictly carried out for six weeks, in bed all the time. My weight when I began the rest cure was 12 st. 6 lb. (about 6 lb. too much, according to height); it had not varied for over twenty years. When I came away from the nursing home I was 14 st., and had not slept *at all* for five weeks. I had no pain, not the slightest discomfort or flatulence, but still, after some few months, I found out that my insomnia was due entirely to my food. I reduced all my meals, especially my evening meal, taking for that meal something very simple and no animal food with it; I also masticated my food much more thoroughly. After a few months' careful feeding I have since slept quite well again. I always had a good appetite, and I believe that was the cause of my insomnia. I strictly avoided hypnotics and only took one on three or four occasions. My age at that time was 47.

### STRENGTH OF MERCUROCHROME SOLUTION IN GONORRHOEA.

MR. W. HARRISON MARTINDALE, Ph.D., writes: As this compound, containing over 20 per cent. of mercury in a non-ionized form, is coming into use, I think it should be made clear that in a footnote to the article by Young, White, and Schwartz (*Journ. Amer. Med. Assoc.*, Nov. 15th, 1919, p. 1491) a grave error or misprint was perpetrated, in that a 25 per cent. solution was advocated as an injection in gonorrhoea, whilst a 2.5 per cent. solution was intended. My firm has devoted attention to the manufacture of this compound in a solid form ready for dissolving, and has had no adverse reports of its use. In the *Extra-Pharmacopoeia* (p. 675, eighteenth edition) I have summarized statements in the current medical literature on this new remedy. The 25 per cent. solution was mentioned, but the strength seemed to me so high as to necessitate a word of warning, which, therefore, I inserted both at that page and in the preface, p. xvii. At a recent meeting at Montreal of the Inter-State Post-Graduate Assembly of America I understand the mercurial was criticized severely, and it is possible that the strength of the solution is of paramount importance. May I ask that medical men having a copy of the *Extra-Pharmacopoeia* will be good enough to note on page 675 that, in general, solutions should not exceed 1 or 2 per cent. strength? The misprint was pointed out by Dr. White in the *Journal of the American Medical Association* (November 29th, 1919, p. 1708), which I have only recently seen. It is there stated that the 2.5 per cent. is the strongest solution used in the urethra.

### WITTY INVENTIONS.

THE Institute of Patentees, of which Lord Askwith is president, has brought together at Westminster Central Hall an exhibition of new inventions, many of them so simple and obvious as to make one wonder why nobody ever thought of them before. A good deal of ingenuity has been expended on making the same thing, with the minimum of adjustment, serve two or more different purposes. Thus there is an article of furniture which recalls Goldsmith's "bed by night, a chest of drawers by day," for, by a couple of movements, it can be converted from a bedstead to an oak table, and, appropriate to these times, there is a motor body which is convertible in a few moments from a touring five-seater to a van. A good many small domestic implements also "contrive a double debt to pay." There is a thimble with a cutting mechanism to snap off the ends of thread or cotton, and there are nut-crackers which not only break the shell but scoop out the kernel, and furnish a toothpick as well! One little device will remove a good deal of embarrassment from afternoon tea parties. It enables a person with a single grip of finger and thumb to hold in perfect balance a plate and a cup and saucer. Many men deserve less well of their kind than the inventor of such a thing as that. Then there are arrangements for preventing windows from rattling or bed quilts from slipping, there are kettles which never boil over, and teapots with lids that cannot fall off. Other inventions are more ambitious. Among several devices for preventing industrial accidents are self-adjusting safety belts for catching falling workmen. Some one has invented a tri-signal indicator for fitting to the rear or side of a motor car. It gives a warning yellow light when the car is turning to the right or off side, a red light when it is slowing down or stopping, and a green light when it is turning to the left or near side. Some of the inventions have a hygienic motive; various new forms of automatic disinfection, cleansing, and deodorizing are exhibited. Other devices include rubber hot-water bottles for wear, either around the waist as belts, or, in the shape of a stole, for placing around the neck and under the arms, for use in disorders of the chest. A vibro-massage apparatus is motorless, but is fitted to the bath tap, and the direction and strength of vibration are regulated at the tap and transmitted through a rubber diaphragm to any part of the body. One invitation of medical interest is the work of a lady (Miss Holmes), and is an apparatus of a simple, compact, and portable kind for artificial pneumothorax; it is being placed on the market by Messrs. Allen and Hanburys. Altogether, the exhibition proves that what the ancient writer calls the knowledge of witty inventions has by no means worked itself out. The ingenuity extends, not only to the contrivances, but to the words used to describe them. At every turn one comes across fresh coinages like "gassaver," "fixoquick," "gripall," and "eezikary," which make one wonder what the English language is coming to. The exhibition closes on June 13th.

### THE VALUE OF THE GOAT.

THE British Goat Society has published in its *Year Book* for 1925 much valuable information about this animal, which does not yet receive the attention in this country that it deserves. The considerable economic possibilities of goat-keeping are well described in several short articles, and Dr. B. D. Z. Wright gives several examples of the value of goat's milk in the treatment of various diseases. The large amount of practical details it contains will commend the book to those who keep goats, either as a hobby or for profit, and the numerous interesting articles and good illustrations should secure for it a wide circulation. Copies of the *Year Book* may be obtained from the office of the British Goat Society, 10, Lloyd's Avenue, E.C.3, price 1s. 6d., post free.

### THE "MOTOR OWNER."

THE *Motor Owner*, a monthly magazine of motoring, has been issued in a new and improved form. It is a paper which combines amusement with the more serious task of instruction in driving and the use of the roads, and with criticism and descriptive matter. Thus, in the June issue, Mr. S. F. Edge opens a series of "Driving hints from experts." His golden rule is: Never drive faster than the speed at which you know, and can see, that the car can be pulled up. An address on the "Courtesy of the road," broadcasted by Mr. Stenson Cooke, secretary to the Automobile Association, is reproduced. A barrister-at-law discourses on what is likely to be a matter of serious difficulty to the medical motorist—alleged obstruction through leaving a car in a public street. There is an amusing article on police trapping on the new arterial roads which have been built for motor traffic largely out of taxes on motors. Imaginative writing is exhibited in the attribution to a car of the beauty of Venus, the strength of Hercules, and the speed of Mercury. The illustrations are numerous and good.

### "DOCTORS DIFFER."

"E. S." writes: I see that Dr. Robert Hutchison in his interesting and wise address (May 30th, p. 995) repeats the statement that this saying refers to practitioners of medicine. Is he right in this? May it not be that the proverb was applied originally to doctors of law, or of theology, or philosophy, or simply to learned people as a class, who may be expected to differ because they deal with matters that are difficult? Dr. Hutchison raises, too, the all-important question for the individual and the nation of how to acquire a sane outlook. One would think that to begin with there must be a sincere regard for truth and sympathy; then there should be a knowledge of any particular subject at first hand, or from a reliable source; and the emotions must be subdued to truth. But, of course, people vary in intelligence, in emotional restraint, and in desire for truth; and many subjects are so complex that their principles have not yet been settled. A truth-seeking scepticism and a sense of humour are saving graces.

### VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 41, 44, 45, 46, and 47 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 42 and 43.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 263.